About Hytech Automation

Hytech Group, established in the year 1992 is a technology oriented manufacturing industry based in Pune, Maharashtra, India. Hytech group started as Hytech Hydraulics catering to hydraulics automation requirement for process industries. Now, there are Today, Hytech Group owns four verticals broadly classified as under -

- Hytech Automation
- Hytech Automation – Didactic Solutions
- Hytech Hydraulics
- Hytech Distribution

Hytech Automation

Hytech Automation is one of the channel partners for the integration of Fanuc Industrial Robots. Core activity of Hytech Automation is automation related solutions. This is a project oriented division that caters to industrial robotics integration as well as application oriented process integration. Few top clients include Maruti Suzuki, Indian Railways, LG India, etc.

Hytech Automation also manufactures special purpose machines required for technologically advanced applications. One of the most successful product is Laser assisted CNC Turning machine which was developed in collaboration with DRDO – INDIA and LZH – Germany. This specially designed CNC turning machine can machine components up to 78 HRC.

Hytech Automation – Didactic Solutions

Hytech Automation – Didactic Solutions mostly deals with the Automation and Application Engineering related Educational Solutions. These Didactic Solutions involve manufacturing of training kits as well as services such as 'Syllabus Designing' and 'Train the Trainer Program'. There are four verticals in this division namely, CIM – Computer Integrated Manufacturing, Mechatronics, CNC Machines and Robotics.

With more than 20 years' experience in the field of technological solutions, Hytech Automation – Didactic has acquired necessary expertise to provide industry oriented educational solutions which are relevant almost all over the world.

Hytech Automation is authorized channel partner for Fanuc Robots as well as Fanuc CNC related products. With client base in more than 25 countries, 'Hytech Automation – Didactic Solution' has more than 3000 active customers in educational as well as industrial sector. Few of the reputed customers include Maruti Suzuki - India, Bosch – India, Indian Navy, Mahindra and Mahindra, Myanmar Navy, Singapore Polytechnic, Khartoum University - Sudan, Palestine Technical University, etc.

Hytech Hydraulics

Hytech Hydraulics is the oldest vertical under Hytech umbrella. It caters to the hydraulic related automation as well as project requirements in process industry. Few top clients include Thyssen Krupp, Wonder Cement, Ambuja Cement, Dalmia Cement, etc. Hytech Hydraulics has supplied more than 300 kiln thrusters operating in 4 different continents. Few of the kiln thrusters are operational 24 x 7 for more than 22 years.

Hytech Hydraulics has designed and patented a fine flow control valve which is considered as a monopolistic product in the cement industry. More than 2000 such valves are operational in various cement plants all across the globe.

Hytech Distribution

Hytech Distribution is the trading arm of Hytech Group. Over the years, Hytech Group has established collaborations with few reputed manufacturers as well as service providers from all over the world. Hytech holds distributorship of BobCAD – CAM, Fanuc NC Guide, Fanuc Roboguide, Fanuc Simulator, Visual Components, IRAI – Automgen, etc.

Models


PNEUMATIC TRAINING KIT - BASIC
HYTECH
HYTECH
Since 1992
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PNEUMATIC TRAINING KIT - ADVANCE
HYTECH
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Hytech – Pneumatic Training Kits

- Hytech Pneumatic Training kits are designed to provide complete training on Pneumatics where participants start from novice and are expected to reach the expert level with two available options (Basic and Advance).

- Basic Pneumatic Training Kit is designed to provide hands on experience on conventional pneumatic valves. Most of the commonly used pneumatic valves are provided along with Basic Pneumatic Training Kit. Students are expected to design and simulate the basic pneumatic circuits on Simulation software and execute the same on basic pneumatic training kit.

- Electropneumatic training kit is provided with advanced level conventional valves, solenoid valves, pressure switch as well as the PLC. Participants are expected to operate advanced pneumatic valves in collaboration with PLC. All necessary accessories such as input and output modules are provided to make it easily operable for participants.

- Automation modules can be connected with Basic as well as Advance training kits which give participants necessary hands on experience on industrial pneumatic applications where participants can relate the use of various pneumatic valves.

Hytech – Pneumatic Training Kit Models

Pneumatic Training

Basic

Conventional Pneumatic Valves

Basic Circuit Design

Circuit Simulation

Advance

Advance Pneumatic Valves

Solenoid Valves / Pressure Switch

PLC Based Pneumatics

Circuit Design and Simulation

Pneumatic Training Kit – Basic
THE PROCESS

- Basic Pneumatic Training kit is designed to provide pneumatic training to participants from 'NOVICE' level
- Participants are expected to understand the basic pneumatic valves, their symbols, their function, operations as well as industrial applications.
- The process starts with a basic circuit design on a 'CIRCUIT PAPER', designing the circuit on 'CIRCUIT DESIGN and SIMULATION SOFTWARE', simulating the circuit on 'CIRCUIT DESIGN and SIMULATION SOFTWARE', and finally executing the same on 'HARDWARE TRAINING KIT'.

The PROCESS:

- **CIRCUIT PAPER:** This is a printed paper on which valves are printed exactly as per their location on hardware kit. Participants are expected to design a circuit by drawing a circuit connecting printed valves and actuators
- **CIRCUIT DESIGN and SIMULATION SOFTWARE:** This is a circuit design and simulation software from IRAI France in which students can design the circuit by importing necessary valves and actuators from the library. In this software, circuit design is done with the ISO symbols. Participants are expected to simulate the circuit operation which is drawn on the 'CIRCUIT PAPER'
- **HARDWARE TRAINING KIT:** The circuit which is designed on 'CIRCUIT PAPER' and simulated on 'CIRCUIT DESIGN and SIMULATION SOFTWARE' is finally executed on the hardware kit.

Pneumatic Training Kit – ADVANCE THE PROCESS

- Advance Pneumatic Training kit is designed to provide advance pneumatic training to participants with focus on operation in collaboration with PLC.
- For this training kit, participants are expected to have basic knowledge of Pneumatics as well as PLC operation. Ideally Basic level courses on Pneumatics and PLC training should be completed before participants enter into Advance Electropneumatic training course.
- Advance Electropneumatic training kit is a double sided kit. On one side, conventional pneumatic valves are mounted (BASIC Training Kit) and on the other side, advance electropneumatic valves are mounted.
- Advance Circuit design and simulation software from IRAI (AutomGen) is supplied along with ADVANCE ELECTROPNEUMATIC training kit with which participants can design and simulate advance electropneumatic circuits. Participants can upload the designed PLC ladder without the use of any third party software.
- Advance Electropneumatic Training kit is a complete training kit in which following courses can be conducted:

1. Basic Pneumatic Training
2. Basic PLC Training
3. Advance Electropneumatiic Training

The PROCESS:

- **PNEUMATIC CIRCUIT PAPER:** This is a printed paper on which valves are printed exactly as per their location on hardware kit. Participants are expected to design a circuit by drawing a circuit connecting printed valves and actuators. Corresponding inputs and outputs are marked wherever necessary for PLC ladder design.
- **PLC CIRCUIT PAPER:** Participants are expected to design PLC ladder on this paper. All necessary symbols are their meanings are printed on the paper to make it easier for participants to design the ladder. The PLC CIRCUIT PAPER is designed as per the PLC used in the Electropneumatic Kit (SIEMENS / MITSUBISHI / Allen Bradley)

There are two ways in which the circuit can be executed on electropneumatic training kit. One is to operate the kit directly from IRAI software which is directly communicating with PLC through Ethernet protocol. Ladder can be designed as well as uploaded directly through software. Second method is to

- **CIRCUIT DESIGN and SIMULATION SOFTWARE:** This is a circuit design and simulation software from IRAI France in which students can design the circuit by importing necessary valves and actuators from the library. In this software, circuit design is done with the ISO symbols. Participants are expected to simulate the circuit operation which is drawn on the 'CIRCUIT PAPER'
- **CIRCUIT DESIGN with PLC SOFTWARE:** Participants can design various ladders with PLC software such as Siemens / Mitsubishi corresponding to PLC used in trainer kit.
- **HARDWARE TRAINING KIT:** The circuit which is designed on 'CIRCUIT PAPER' and simulated on 'CIRCUIT DESIGN and SIMULATION SOFTWARE' is finally executed on the hardware kit.

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Pneumatic Training Kit – BASIC

Key Features

- Double sided training Kit
- Anodised aluminum profile based work surface with quick fixing mechanism for pneumatic components
- Industrial MDF based work table
- Mobile kit with lockable castor wheels and rigid mounting arrangement
- Valve mounting plates with laser engraved name and ISO symbol
- Provided with basic operational accessories such as distributors, isolators etc.

Pneumatic Training Kit – ADVANCE

Key Features

- Double sided training Kit
- Anodised aluminum profile based work surface with quick fixing mechanism for pneumatic components
- Industrial MDF based work table
- PLC Mounted on the kit with hardwired input and output connections with PLC input and PLC output modules.
- Field inputs such as reed switches, electrical input switches, pneumatic pressure switch etc are hardwired to Field input module
- Field outputs such as Solenoid coils are hardwired to Field output modules
- Participants can connect desired field inputs / outputs with PLC inputs / outputs in accordance with designed ladder diagram
- Ergonomically mounted workstation (connected with Electropneumatic PLC) through which participants can operate the training kit
- Provision to connect automation modules with the trainer kit through single connector. Automation modules can be operated through PLC and Field modules
- Mobile kit with lockable castor wheels and rigid mounting arrangement
- Valve mounting plates with laser engraved name and ISO symbol

Pneumatic Training Kit – AUTOMATION MODULES

Conveyor Based Color Sorting

- Standalone unit which can be easily connected with Advance Electropneumatiic training kit through industrial 12 pin connector
- Operated with solenoid valves mounted on the training kit
- Industrial color sensor
- Complete operation through PLC
- Electrically operated conveyor

Press Application (Bearing Assembly)

- Can be connected with BASIC as well as ADVANCE kits
- Can be operated with various valves mounted on the training kits such as 'Hand Lever Operated Valve', 'Pilot Operated Valve', 'Dual Pressure Valve', 'Solenoid operated Valve' etc.
- Gives clear idea to participants how different valves can be used for industrial applications along with their unique advantages
- Mobile unit with bearing assembly as well as disassembly

Pneumatic Training Kit – ADVANCE Accessories

- **INPUT Modules:**

Input modules consist of PLC input module and Field input module. All PLC inputs (24 inputs) are hardwired with PLC input module. There is a provision for input override for participants to manually switch ON the input. Each connection is done with an individual connector which makes it easy for maintenance as well as replacement. Desired PLC input is connected with Field input with patch cord. LED indication is provided to display the current status of inputs on both PLC as well as Field input modules.

- **OUTPUT Modules:**

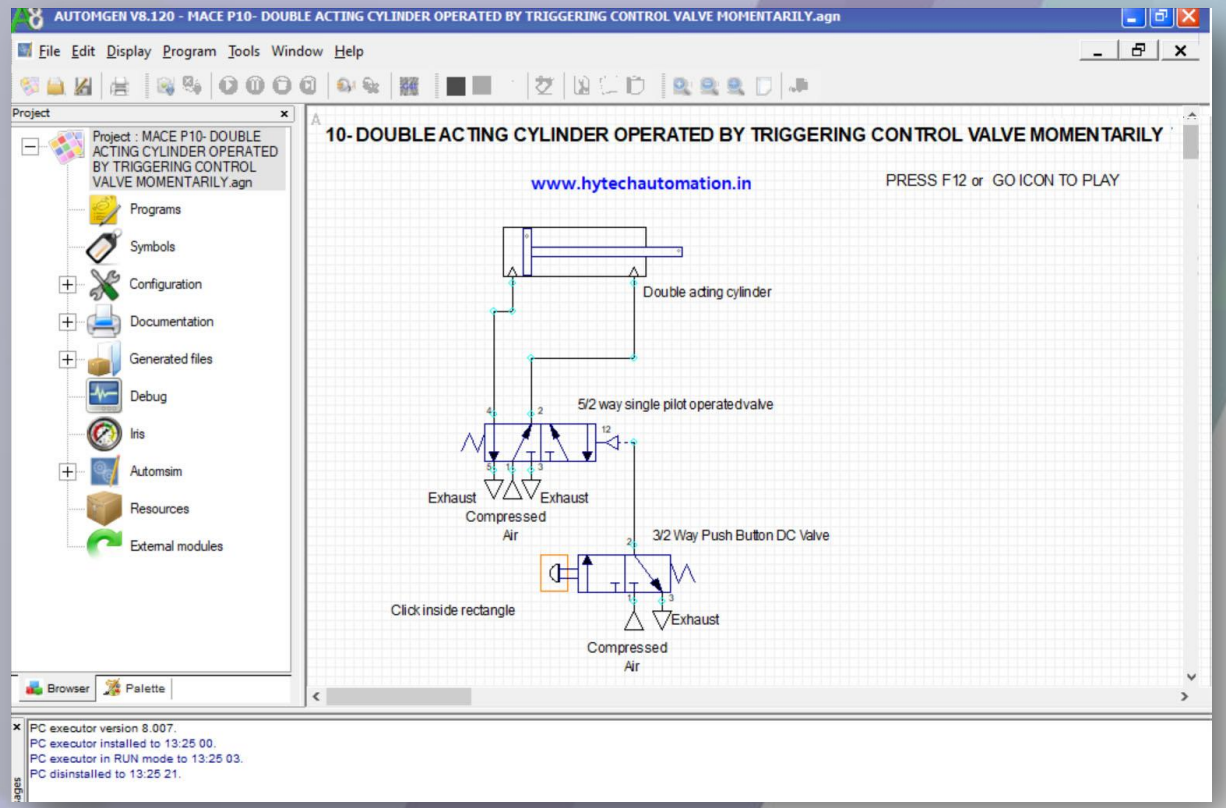
Output modules consist of PLC output module and Field output module. All PLC outputs (16 outputs) are hardwired with PLC output module. Each connection is done with an individual connector which makes it easy for maintenance as well as replacement. Desired PLC output is connected with Field output with patch cord. LED indication makes it easier to understand the status of outputs.

Pneumatic Circuit Design and Simulation Software AUTOMSIM

Automsim – BASIC

Pneumatic Circuit Design and Simulation software

- AutomSIM (Premium - Academic) can be used to design hydraulic, pneumatic as well as electrical circuits
- More than 200 basic pneumatic components in the library
- Any pneumatic component, presently being used in industry is available in the library
- Circuit design based on symbols
- Any circuit that can be executed on HYTECH BASIC PNEUMATIC TRAINING KIT can be designed and simulated on this software
- EXE file can be generated which can simulate the circuit without the licensed software. Students can operate the circuits individually without the licensed software
- Not expensive : 1/5 of the price of the competitor software



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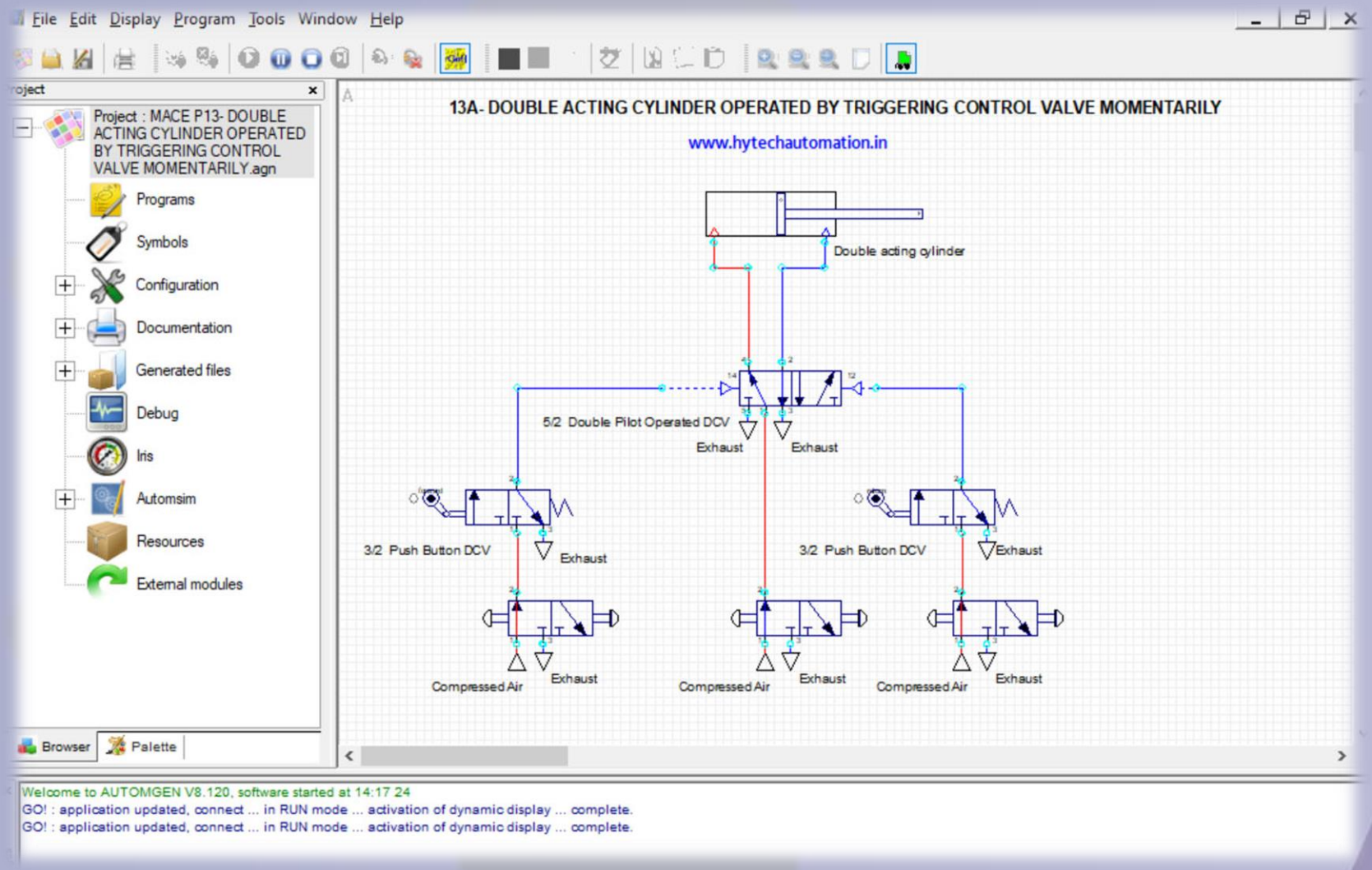
Pneumatic Circuit Design and Simulation Software
AUTOMSIM

Pneumatics Training Solutions



Video Link

https://youtu.be/Gu8aj94P4Ek

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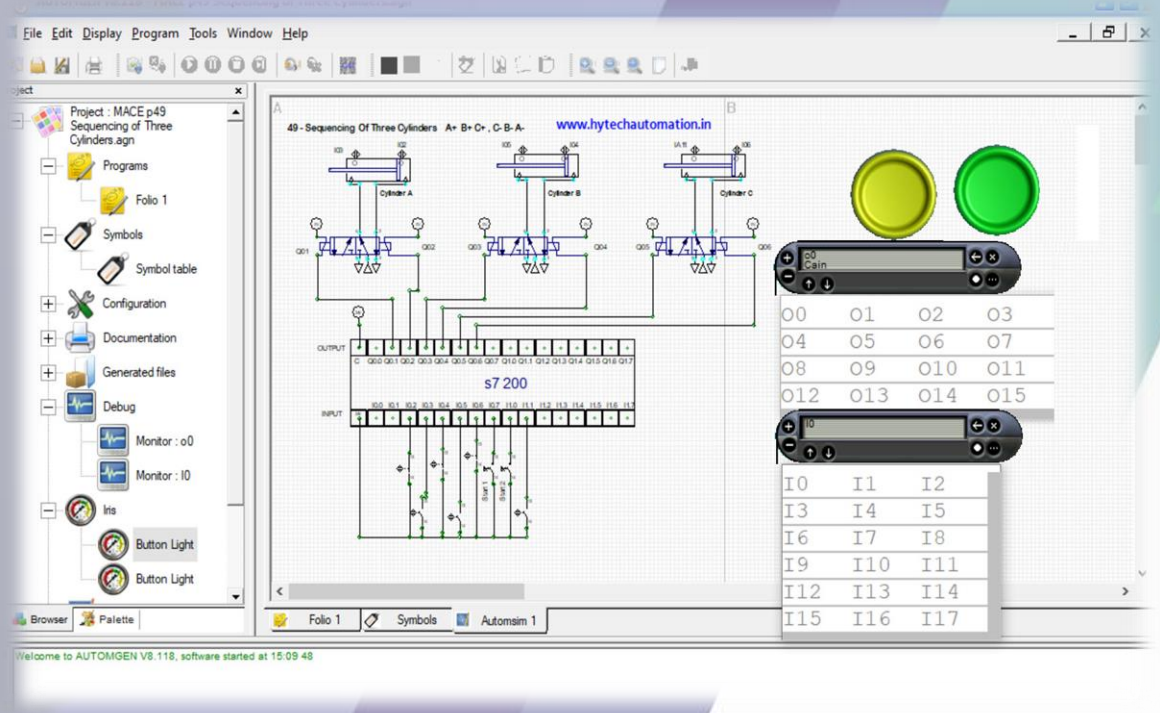
Pneumatic Circuit Design and Simulation Software AUTOMGEN

Automgen – ADVANCE

Advance ElectroPneumatic Circuit Design and Simulation software

- AutomGen (Academic) can be used to design hydraulic, pneumatic as well as electrical circuits with PLC
- More than 200 basic pneumatic components in the library
- Any pneumatic component, presently being used in industry is available in the library
- PLC ladder can be designed in collaboration with pneumatic circuits and with proper referencing, pneumatic circuit on the hardware kit can be directly operated from the IRAI AUTOMGEN Software. No third party software is required to download the PLC ladder diagram. Pneumatic circuit on hardware kit can be operated with dynamic simulation of the same in the software
- Circuit design based on symbols
- Any circuit that can be executed on HYTECH ADVANCE ELECTROPNEUMATIC TRAINING KIT can be designed and simulated on this software
- EXE file can be generated which can simulate the circuit without the licensed software. Students can operate the circuits individually without the licensed software
- Not expensive : 1/5 of the price of the competitor software



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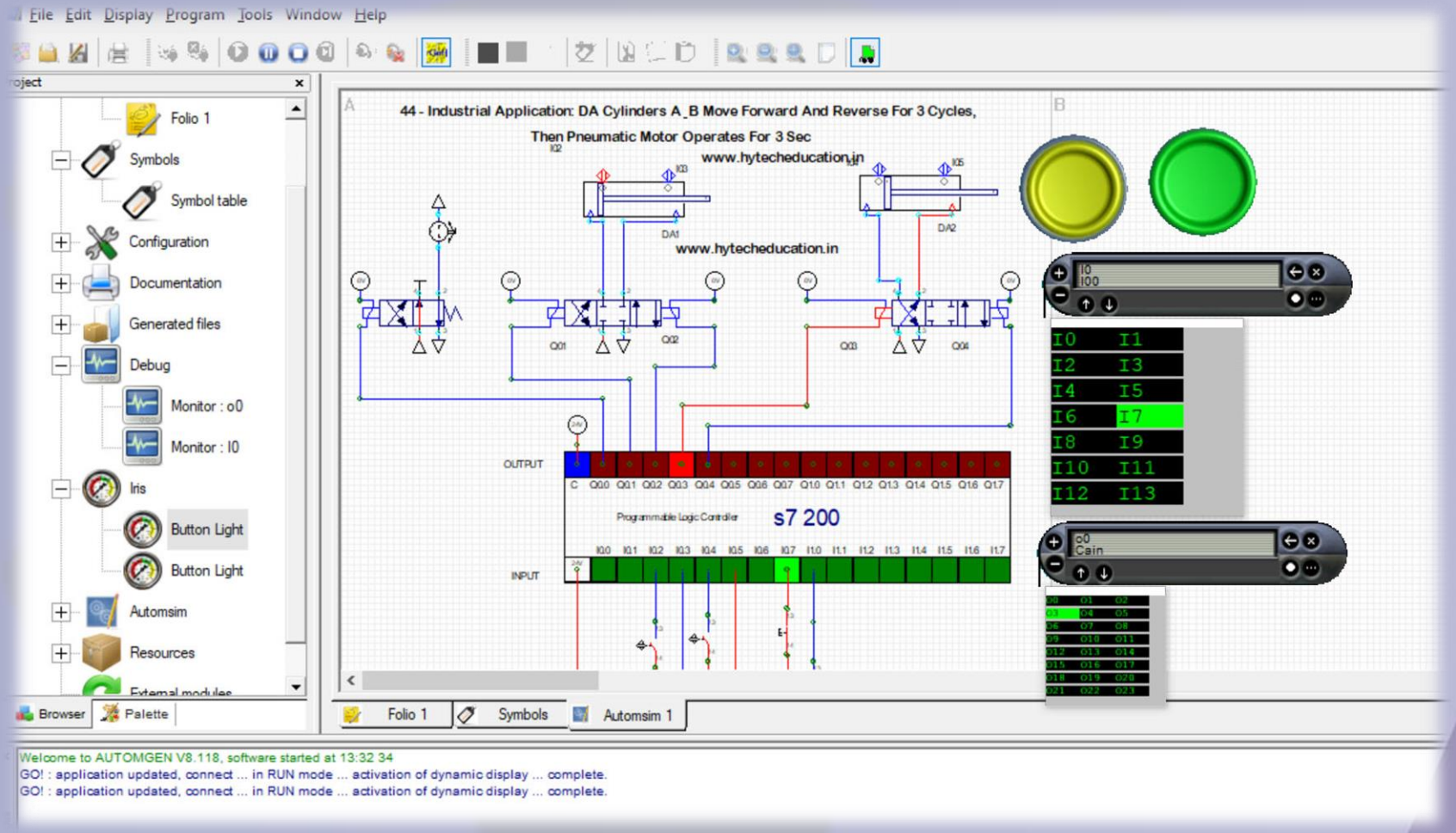
Pneumatic Circuit Design and Simulation Software
AUTOMGEN

Pneumatics Training Solutions



Video Link

https://youtu.be/UsFZDDKpf3o

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Thank You!

sales@hytechautomation.in | www.hytechautomation.in