SMC Pneumatics V1.0

AUTOMATION STUDIO™ CATALOGUE

Famic Technologies Inc. is proud to present the latest version of the **SMC Pneumatic Automation Studio™ Catalogue**! All of the digital products in this virtual catalogue are pre-configured with SMC's latest technical specifications and are compatible with the **Pneumatic Workshop of Automation Studio™**. Users may now quickly get access to SMC components for their systems integration and spend less time developing component models.

The catalogue features include a Product Configurator compatible with the manufacturer product options, technical documentation, product images and virtual test benches for user convenience. This complimentary package of Automation Studio™ has been developed in accordance with Famic's software certification process.

Catalogue Product List

The components have been categorised on the basis of the product family, as specified on SMC's website (http://www.smcworld.com/products/en/). The following products are now available in this catalogue:

Air Cylinders

- Standard Air Cylinders (Round Type) – [CJ1, CJP2/CDJP2/CJP, CJ2/CDJ2, CM2/CDM2, CM3/CDM3, CG1/CDG1, CG3/CDG3]
- Standard Air Cylinders (Square Cover) – [MB/MDB, MB1/MDB1, CA2/CDA2, CS1/CDS1, CS2/CDS2, ISO Cylinder CP96/CP96SD, ISO Standard Air Cylinder CP96/CP96SD, ISO Cylinder C96/C96SD, ISO Standard Air Cylinder C96/C96SD]
- Compact Air Cylinders – [CUJ/CDUJ, CU/CDU, CQS/CDQS, CQ2/CDQ2, RQ/RDQ, CQM/CDQM, CQU, MU/MDU, C55/CD55, NCQ8]
- Water Resistant Cylinders/Cylinders with Stable Lubrication Function – [CJ5/CDJ5-S/CG5-S/CDG5-S, HY□/HYD□, Water Resistant Cylinders (Pneumatic/Hydraulic)- CM2-Z, CG1-Z, MB-Z, MB1, CQ2-Z, CA2-Z, MGP-Z, MGG, Cylinders With Stable Lubrication Function (Lube Retainer)]
- Mechanically Jointed Rodless Cylinders – [MY1, MY1□W, MY2, MY3]
- Speciality Cylinders [REA, REB, REC, CJ2Y/CM2Y/CG1Y/MBY/CA2Y/CS2Y/CQSY/CQ2Y, CJ2X/CM2X/CQSX/CQ2X/CUX, MQQ/MQM/MQP]
- Stroke Reading Cylinders [CEP1, CE1, CE2]
- ISO Cylinders – [C85, ISO Cylinder CP96/CP96SD, ISO Standard Air Cylinder CP96/CP96SD, ISO Cylinder C96/C96SD, ISO Standard Air Cylinders CP96/CP96SD C76, C95, C55/CD55, HYC]

Rotary Actuators

- Rotary Actuators/Vane Type – [CRB2/CDRB2, CRBU2/CDRBU2, CRB1/CDRB1, MSU/MDSU]
- Rotary Actuators/Rack & Pinion Type – [CRJ, CRA1/CDRA1, CRQ2/CDRQ2, MSQ, MSZ, CRQ2X/CDRQ2X/MSQX, MRQ]

Vacuum Equipment

- Air Suction Filters – [ZFB, ZFA, In Line Air Filter ZFC, Suction Air Filter ZFC]

Air Preparation Equipment

- Air Preparation Filters – [AMG, AFF, AM, AMD, AFF30, AM30, AMD30, AMH, AME, AMF, SF, SFD, LLB, LLB1]

Modular F.R.L./Pressure Control Equipment

- Modular F.R.L. Units – [AC-A, AF-A, AFM-A, AFD-A, AR-A, AL-A, AW-A, AC-B, AR-B, AR□K-B, AW-B, AW□K-B, AW30/40-X2622, AWM, AWD, ACG, ARG, ARG□K, AWG, AWG□K, E210/310/410, Soft Start Valve AV2000, AF]

Process Valves

- 2/3 Port Valves for Fluid Control – [VX2, VXK, VXD, VXZ, VXE, VXP, VXH, VX3, VXA]

- 2/3 Port Solenoid Valves for 5.0 MPa– [VCH, VCHC]
- Regulators– [AW30-B to AW60-B-X430/X440]

Pneumatic Instrumentation Equipment

- 2/3 Port Valves for General Purpose Fluid Control – [VNA, VNB]

Ex.: Stroke Reading Cylinder – CEP

Product Selection and Configuration

The **Catalogue Manager** of **Automation Studio™** consists of three sections as shown in Figure 1. The first section (1) contains a catalogue tree similar to the manufacturer's website where a user can easily find a component as per the requirements. In the catalogue tree, components have been categorised as per their types and functions. The second section (2) consists of different tabs where the user can get information like technical data, images or 3D CAD files of the selected component. The "Documents" tab of this section contains test files and the manufacturer's technical specifications of the product. Section (3) shows a "Set Specific Part Number" function button which opens the "Product Configurator" window as shown in Figure 2.

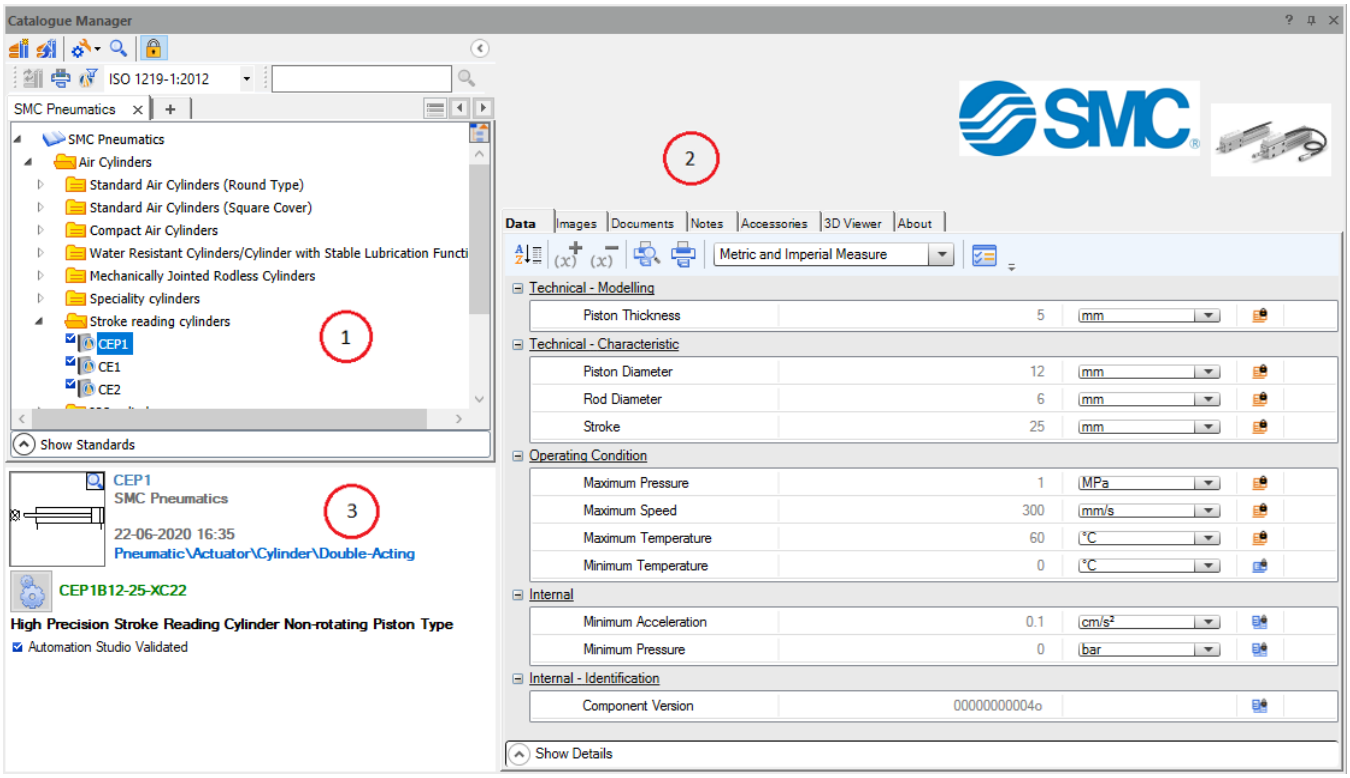

Figure 1: Catalogue Manager Window Displaying Technical Data and Symbol of the Selected Cylinder (Stroke Reading Cylinder CEP1)

Using the “Product Configurator”, the user can easily select specific product characteristics and configure the manufacturer‘s specific part number of the component. The options to choose the desired mounting style, cylinder bore, stroke and more are available. The product information, technical data and symbol get updated with the selected options. The “Symbol Viewer” button (refer to Figure 2) allows the user to magnify the view of the configured component’s symbol. All these Catalogue Manager features were designed to enable the user to easily choose and configure pre-modelled components.

Users may now simply drag and drop the desired component into the editor area of Automation Studio™ for circuit integration. The component models can be directly used for the design of a pneumatic circuit, real-time simulation or monitoring in Automation Studio™.

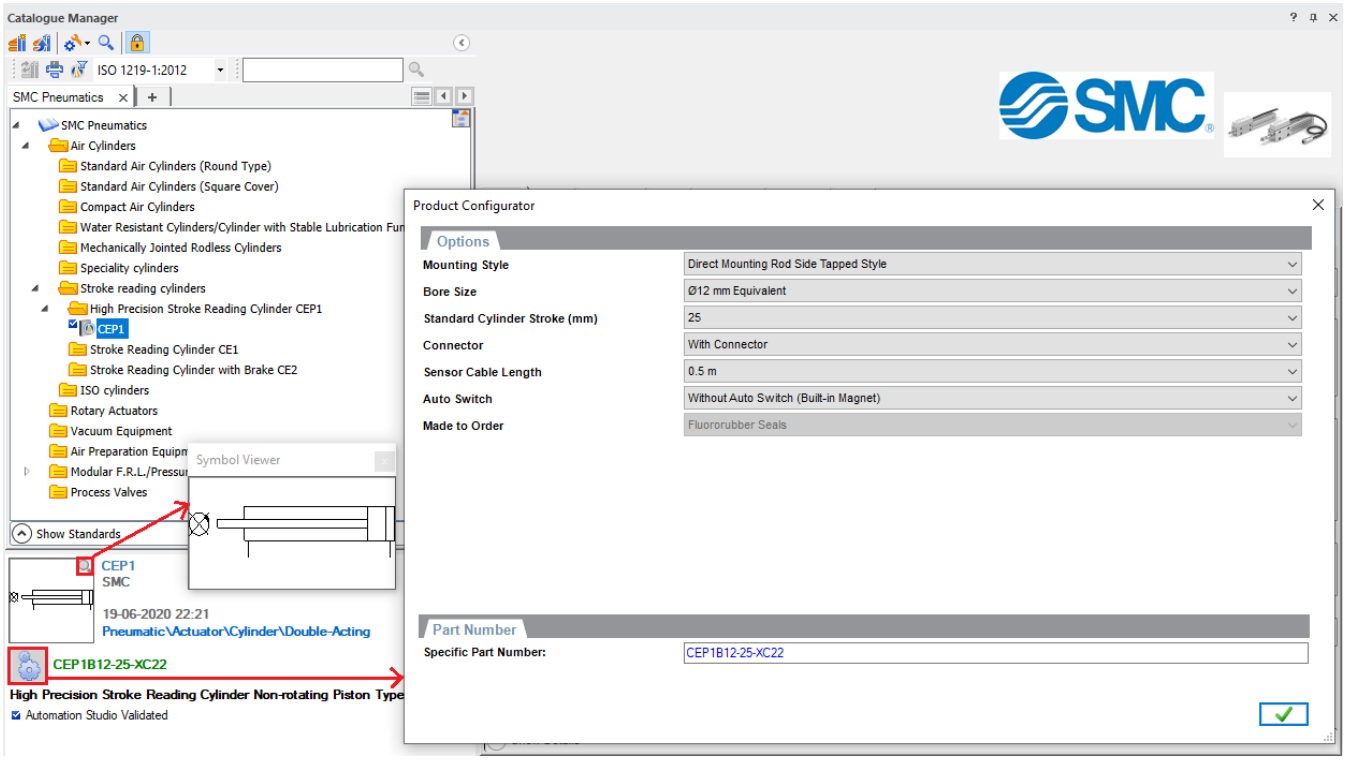

Figure 2: Configuring a Part Number of a Stroke Reading Cylinder CEP1 Using the Catalogue Manager's Product Configurator Window.

Product Test and Application

The components in the catalogue are configured and tested for various sizes, rated flows and pressure ratings at a 10 millisecond interval simulation pace. The simulation models take into consideration each product's performance data available in the manufacturer specifications and adjust them to the specific project working conditions (reference pressure, temperature, etc.). For example, to verify the influence of flow on the outlet pressure of a filter, the pressure drop test is simulated as shown in Figure 3. With this test, the change in pressure drop with varying flow rate, as per the specification, is confirmed. This virtual tests bench is available in the catalogue.

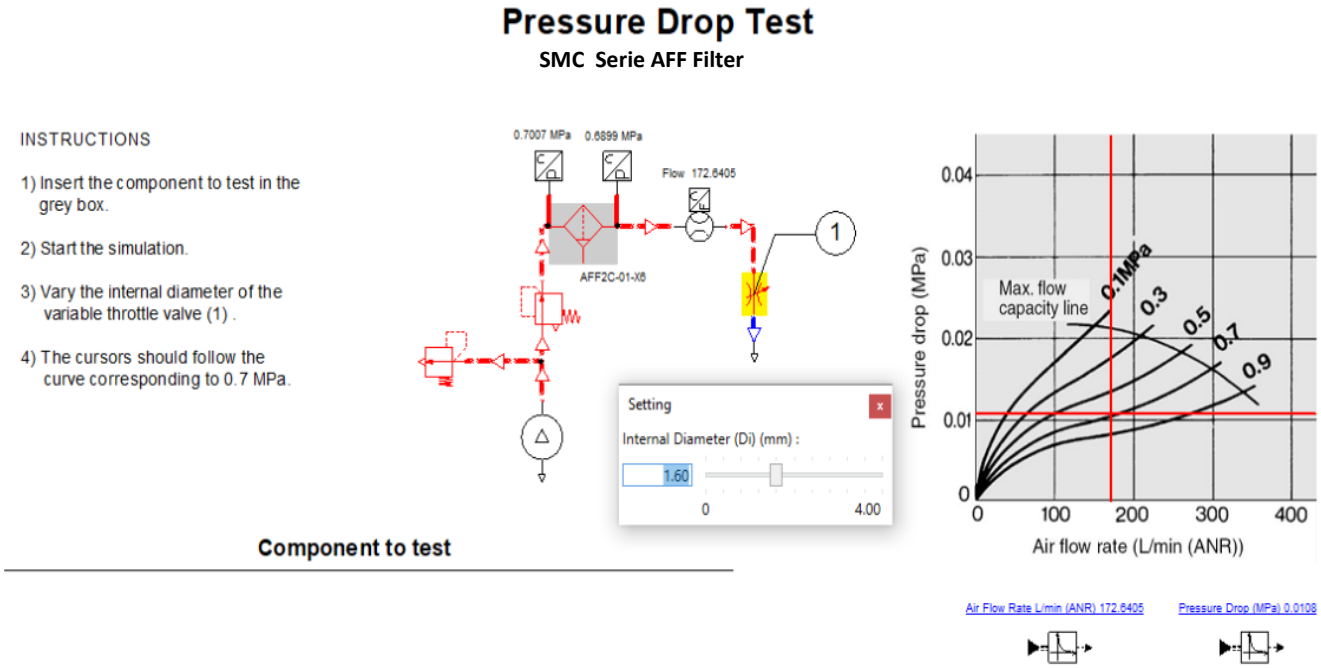

Figure 3: Pressure Drop Test of a AFF Series Filter

Similarly, tests to validate the behaviour of a pressure regulator are also available. In Figure 4, the behaviour and performance of an FRL Series AR10A-40A is tested. These tests validate the performance of each product of the catalogue as per the manufacturer's specifications. All the components of this catalogue are ready to simulate and can be used directly in Automation Studio™ for any application project. The performance test files for each product are available in the "Documents" tab of the Catalogue Manager.

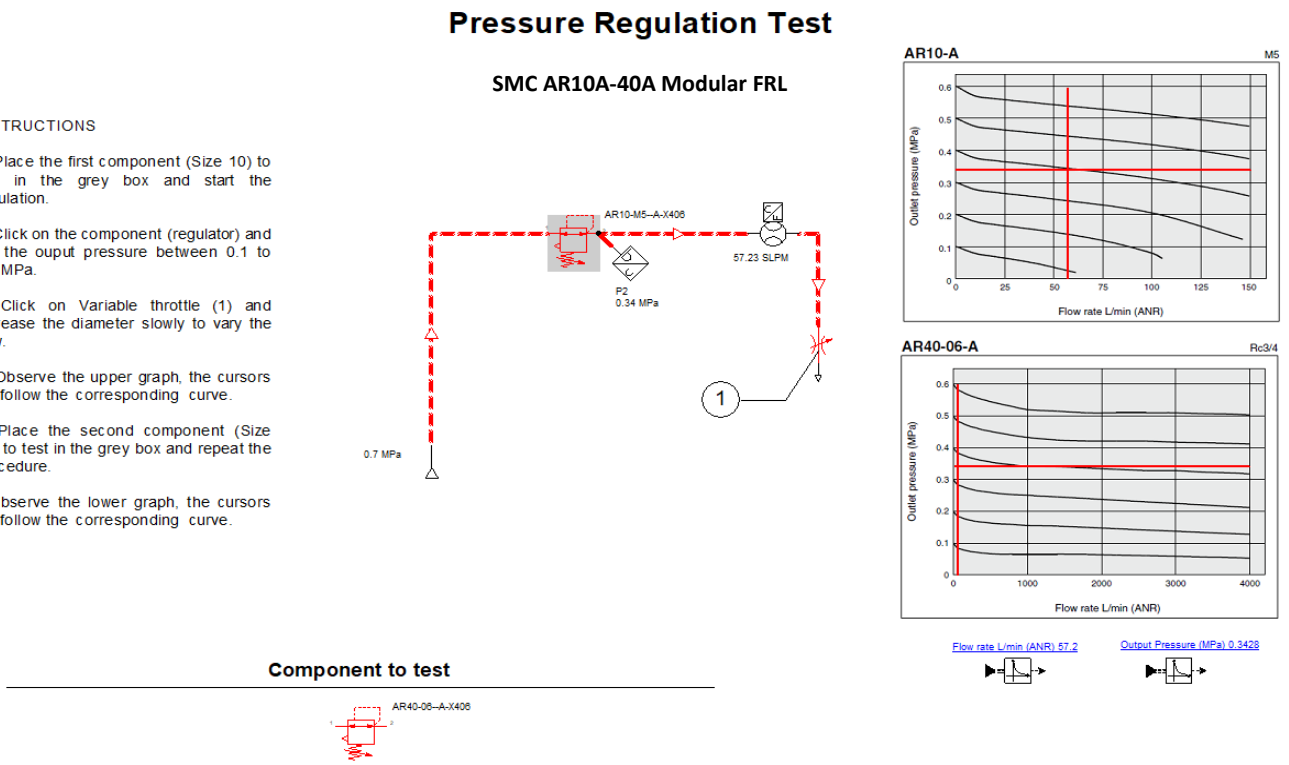

Figure 4: Function and Performance Test of a Series AR10A-40A Modular FRL

Figure 5 shows a ready to simulate SMC Soft Start Valve to drag and drop from the catalogue into the application circuit in Automation Studio™. It demonstrates that the same size components are compatible and can be quickly configured and combined into industry-relevant applications.

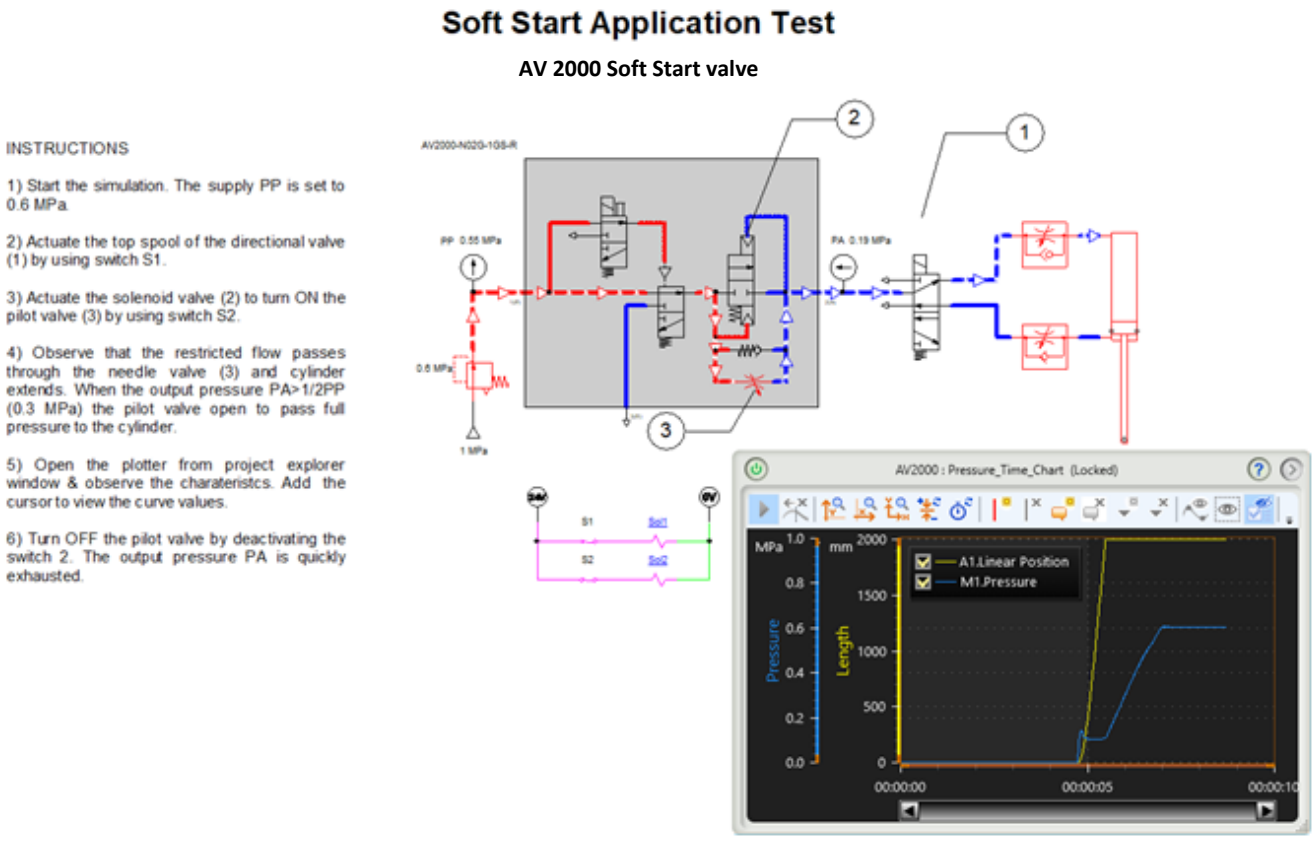

Figure 5: An Application Project in Automation Studio™ Featuring Ready to Simulate AV 2000 Soft Start Valve

These test cases demonstrate how pneumatic circuits containing **SMC** components can be quickly simulated, analysed and monitored in real-time using the latest version of the **Automation Studio™ Catalogue.**

For more details about this catalogue, please contact our Support Team at support@famictech.com.

Famic Technologies Inc.