

AutoSave

Support for GE FANUC CNC & PMC

Enterprise tools for automation source management

OVERVIEW

The AutoSave suite of products provides you with the software tools needed to manage all your automation programs. AutoSave controls and tracks the changes to your industrial programmable devices and program sources including GE FANUC CNC and PMC – LEP programs. The GE FANUC CNC is represented within AutoSave as one device with two associated AutoSave programs; one for the CNC, one for the PMC virtual PLC. The CNC module uses the GE FANUC FOCAS libraries to back up and restore NC data; remote agents are supported. The PMC module program for the virtual PLC (PMC) of the CNC uses Ladder Editing Package (LEP) software.

AutoSave's Microsoft Windows-based client application offers you both an interactive environment and background monitoring, resulting in a comprehensive change management solution. You have complete control over your device programs including:

- Upload, Download
- Restrict File Access by Computer or Individual
- Scheduled Comparison with AutoUpdate Option
- Historical Tracking and Audit Trails
- Automatic Change Notification
- Quick Disaster Recovery
- Separate AutoSave GE PMC module program for the virtual PLC portion (PMC) of the CNC

CLIENT / SERVER / AGENT

The GE CNC module is comprised of the AutoSave client installed on a Windows workstation, an AutoSave server acting as the master control center that coordinates all change-related programming activities and stores program files and an agent providing distributed processing efficiencies for the server.

ARCHIVED CONTENTS

The GE CNC file set is comprised of the files using the program name *.txt while the PMC is comprised of ~.lad

and ~.prm. The complete unit is restored to the client whenever needed for subsequent use. SRAM may be included on some CNC models if e-stopped.

SECURED PROGRAM ACCESS

The GUI-based client interface allows a user to access the AutoSave functions with a login and password. At login, the AutoSave server determines the level of access to the different areas and programs that are permitted to the user and the client PC. AutoSave provides audit trails and historical tracking of activities and updates.

VERSION CONTROL

Typically, a user reviews a CNC program but does not make and save changes using AutoSave's locally restored files. Changes are done directly on the CNC via its user interface and are archived to AutoSave via the Upload function or via an AutoUpdate via a scheduled compare. The PMC changes could be made directly on-line using the LEP package, but this is not typical.

UPLOAD

AutoSave provides uploads that use the GE FANUC FOCAS libraries to backup (upload) NC data or uses LEP to gather PMC files. Client-based uploads rely on the client's local copy of the applications to perform the upload; server/agent-based uploads can be initiated from a client even if it does not have the application installed. The server selects an agent to perform the upload. For some CNC models, the SRAM upload code has been integrated into the overall CNC upload so that if the CNC is in emergency stop mode the SRAM is included in the upload. Otherwise, the upload proceeds without it.

DOWNLOAD

AutoSave provides a client-based download that uses the GE FANUC FOCAS libraries to restore (download) NC data or LEP to restore PMC files. A download to the processor enables the user to select the current copy or any available ancestor or version with which to update the processor's files and results in the creation of a new current copy.

Features

COMPARISON FEATURES

The CNC comparisons show line-by-line differences that correspond to commands or parameter values in the CNC. The compare ignores SRAM file differences since the files may or may not be present and always differ if the CNC was running between uploads. The PMC comparison is a simple compare; binary files indicate binary differences (no details), text files for graphical compares provide a link to the details, and missing files are reported as such.

COMPARISON ON DEMAND

Any two copies of a program can be compared to each other or the CNC. The comparison is done on an as-needed basis and is performed from any client granted access to the device program.

AUTOMATED COMPARISON

The module provides unattended comparisons of scheduled groups of programs. The agent performs the actual upload and can compare the *processor* data to the current or a master copy or the *current* to a selected version. Scheduled uploads are another option.

The module supports the optional **AutoUpdate** feature when differences between the CNC and current copy are detected. Sample summary report...

AutoSave GE Fanuc CNC Difference Report

Section / File	Comparison Result
Parameters	DIFFERENT
Settings	Same
CNC Series/Model	Same
Custom Common Macros	DIFFERENT
Custom Local Macros	Same
Pitch Error Compensation Data	DIFFERENT
Tool Offset Memory B	Same
Program 0001	DIFFERENT
Program 0002	DIFFERENT
Program 0003	Same

Sample detail report...

Parameters

Anc_00022	Parameter 113	113: BYTE= 0
Anc_00028	Parameter 113	113: BYTE= -1

Custom Common Macros

Anc_00022	Macro 150	150: 129876540.7 = 12.9876540
Anc_00028	Macro 150	150: 0, -1 = 00000000

Sample PMC report...

File Name	Comparison Result
gepmc_GMPT_Lab.lad	DIFFERENT (Binary)

NOTIFICATION

Notification e-mail is automatically sent to designated personnel when scheduled comparisons are completed.

COMMUNICATIONS

The modules use Ethernet to communicate to the CNC and the CNC requires the LEP option for PMC backups.

Capabilities

System Highlights	
Client: Real-time Ancestry	<input checked="" type="checkbox"/>
Server: Auto Unattended Operation	<input checked="" type="checkbox"/>
Agent: Parallel/Distributed Processing	<input checked="" type="checkbox"/>
Secured Program Access	<input checked="" type="checkbox"/>
Version Control w/file compression	<input checked="" type="checkbox"/>
Device Upload	<input checked="" type="checkbox"/>
Device Download	<input checked="" type="checkbox"/>
Client Highlights	
Compare	<input checked="" type="checkbox"/>
Server / Agent Highlights	
Time-Base Scheduling	<input checked="" type="checkbox"/>
AutoCompare	<input checked="" type="checkbox"/>
AutoNotify	<input checked="" type="checkbox"/>
AutoUpdate	<input checked="" type="checkbox"/>
Server Platform Support	
Windows	<input checked="" type="checkbox"/>

GE CNC EDITOR/DEVICE REQUIREMENTS

Ethernet requires FOCAS1 library (or later) for Ethernet. The FOCAS library must be installed and licensed on PCs that are being used as the agent. The PMC is a virtual PLC contained in the GE FANUC CNC that could be programmed with GE FANUC's Ladder Editing Package (LEP) software; the agent REQUIRES LEP to perform its operations. These modules only function with the "Open" version of the CNCs; if you are additionally using AutoSave's module for the PMC, LEP can only be used with an "Open" CNC with a PMC type of SB7. Tested devices include: CNC-16i, -18i, -21i, or -32i.