# HIMA Application Project for ELOP II V3.0

## Contents

## 1 Purpose and Usage of the Project “Applications-V1.1“

The functions and function blocks in the project “Applications-V1.1“ and their use should give the project engineers ideas for their work. The project “Applications-V1.1“ contains functions for

- voting
- annunciators
- extended mathematic functions
- code conversions
- the module F 6217 (A/D-convertor)
- sequence controls with and without operating modes
- burner control with a common purge and 4 burner function blocks
- valve control block with simulation of check back signals and error code display
- monitoring the communication of the interface RS 485 and Profibus-DP modules

The blocks of interest for an own project can be copied directly from the project “Applications-V1.1“ or by means of the backup command. All functions can be used in the HIQuad-systems (operating system 7.0-7), with slight exceptions also in the automation systems H11, A1, H41, H51 (operating system Version 6.0-6). Also see the resource type manual, chapter “Supported IEC Functions and Data Types“.

The functions imported in an own project can be used in their original design, or they can be adapted for a particular use. External/global variables are only applied where they lead to an efficient programming.

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| **Note:**  | A program using one of the functions of the Application project has to be checked carefully prior to start-up. |

## 2 Structure of the project “Applications-V1.1“

Frequently used functions and function blocks are grouped in nine user oriented sub libraries in the library “Appl-Lib“. All functions and function blocks in one library are at least once shown in a related program. Each function is described inside the block. In the program hints for the usage are given.

The names of the library, the related program and the resource are identical for better orientation. For each instance of the program a task has been allocated, so that an off-line simulation can be started immediately.

## 3 Off-Line Simulation

After having started the off-line simulation and opened the logic, the function block of interest can be selected via the page list (menu plug-ins). To simulate or display the values of the most important variables, off-line test fields have been defined already. Values of Boolean variables can be altered easily by pressing the key “Alt“ and clicking on the value field. Analog values can be entered directly into the off-line test field and activated with “Enter“.

# 4 Taking over of Functions in an own Project

## 4.1 On the same Computer

In the own project al library must exist. Open the function block of interest in the project “Applications-V1.1“ and click on the icon “Save as“. In the structure window select the target library, enter the name of the object (preferably the same name) and terminate the action with OK. Close the project “Applications-V1.1“, open your own project and use the copied function blocks.

## 4.2 On another Computer

In the structure window of the project “Applications-V1.1“ select the function block of interest or a library and start “Back up“. Enter any name for the back up file. Use the menu “Restore project“ in the other computer to copy the selected function or library in the subdirectory of your own project.

# 5 Modifications to the previous Project “Applications-V1.0“

## 5.1 General

The project has been extended by the library “Comm-Mon“ to monitor the function of the communication module F 8626 (Profibus-DP) and the interface RS 485.

Programming has been performed uniformly. For one range of application only one solution is shown which is kept in different uses.

## 5.2 Library “Annunc“

The first value annunciators now have an output “Gr-Out“ and an input “Gr-IN“ to define a group by means of a variable outside of the function block.

## 5.3 Library “Voting“

This library has been extended by a block “MOS“ (Maintenance Override Switch). Like in the first value annunciators groups can be defined by means of an output “Gr-Out“, an input “Gr-In“ and a variable outside of the blocks. Only one signal of one group can be overridden at the same time.

## 5.4 Library “Comm-Mon“

The library “Comm-Mon“ (Communication-Monitoring) contains function blocks to monitor the communication between a Profibus-DP-Master and the module F 8626. They are matched for the communication with the system PCS7 of Siemens for 8 words each and also to other systems to monitor the data transfer using arrays. They can be used for single or redundant data transfer. If after a defined time no data transfer is active then all received data are reset.