

ReportTAP

(ETAP Reporting Tool)

User Guide

Version 1.1

ELTECHS Engineering & Consulting Co., Ltd.

August 2016

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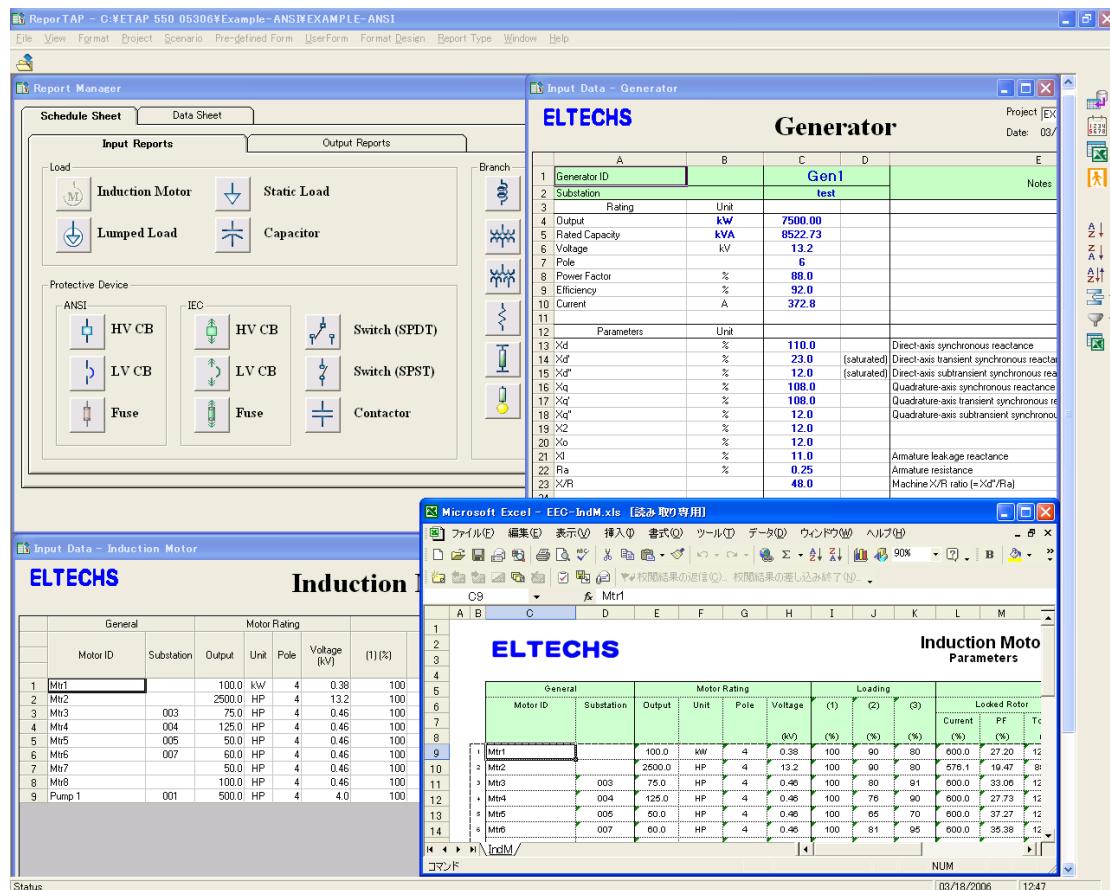
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Chapter 1: Overview

ReportTAP is a versatile power system report management software for creating a variety of reports including user-defined and customizable report formats. It utilizes element input data and analysis results available in an ETAP® project. ETAP is a comprehensive solution for the design, simulation, and analysis of generation, transmission, distribution, and industrial power systems.

ReportTAP publishes reports in Microsoft® Excel® and is setup to allow rapid customization of reports through a user friendly interface. It utilizes the data available in ETAP project files and ETAP output reports and is capable of organizing this data in different formats.

ReportTAP runs on Microsoft® Windows® 7, 8.1 and 10 operating systems.



1. Specifications

Key Features

- Pre-defined Report Formats in Microsoft Excel
- Pre-defined Report Formats in Microsoft Word (Future)
- Work with Basic Knowledge of Microsoft Excel & Microsoft Word
- Use ETAP Project and Report Databases
- No Data Entry Required
- Customize Reports by Filtering & Sorting Data
- Customize Pre-defined Reports
- Create New Report Formats (Next Version)
- Compare Data in Multiple ETAP Reports (Next Version)

Capabilities

- Pre-defined Data Sheet Report Formats
- Pre-defined Schedule Sheet Report Formats
- View & Publish Multiple Reports at a Time
- Advanced & Simple Data Filtering
- Sorting Based on One or More Columns

User Interface Similar to Microsoft Excel

- Customize Reports in Microsoft Excel
- Customize Reports in Microsoft Word (Future)

Schedule Sheet Report Formats

- Induction Motor Input Data
- Lumped Load Input Data
- Two-winding Transformer Input Data
- Three-winding Transformer Input Data
- Capacitor Input Data
- High Voltage Circuit Breaker Input Data (IEC)
- High Voltage Circuit Breaker Input Data (ANSI)
- Low Voltage Circuit Breaker Input Data (IEC)
- Low Voltage Circuit Breaker Input Data (ANSI)
- Single Pole Single Throw Switch Input Data
- Single Pole Double Throw Switch Input Data
- Fuse Input Data (IEC)
- Fuse Input Data (ANSI)
- Equipment Cable Input Data
- Non-equipment (Feeder) Cable Input Data
- Contactor Input Data
- Impedance Input Data
- Reactor Input Data
- Static Load Input Data

Data Sheet Report Formats

- Synchronous Generator Input Data
- Synchronous Motor Input Data
- Three-winding Transformer Input Data

2. File Structure

(1) Microsoft (MS) Excel Template Reports

There are 29 MS Excel files representing 29 predefined report formats in ReporTAP. These MS Excel files are placed in the subfolder “EXCEL” under the application folder where ReporTAP is installed.

Following features in the predefined MS Excel report format files may be modified:

- Logo
- Column Headers
- Fonts
- Cell & Page Formats and Page Settings

The number of header rows or columns may not be modified as such a modification will change the address of data starting cell (column and row). Any cell property that does not change the data starting cell and hence the number of rows per page may be modified.

The MS Excel predefined report format file names which are of the format “EEC-*.xls” may not be modified as the file names are used by the program to identify the reports internally.

The MS Excel predefined report format files are saved in “MS Excel 2000” format. After making the modification in these files they should be saved in “MS Excel 2000” format although the modifications are made in “MS Excel 2002 (Office XP)”, “MS Excel 2003 (Office 2003)” or later.

(2) ReporTAP Template Database

ReporTAP template database is in MS Access format and contains information required to organize the MS Excel predefined report formats. The next version of ReporTAP will also use this database to store information related to customization of predefined reports and creation of new report formats.

The template database is named “RTAP_STD.mdb” and is placed in the subfolder “Template” under the application folder where ReporTAP is installed.

When a new ReporTAP project is created, “RTAP_STD.mdb” is copied to the subfolder “RTData” under ETAP project folder and renamed to “<ETAP Project Name>.RTP”.

The databases “RTAP_STD.mdb” or “<ETAP Project Name>.RTP” with MS-Access may not be modified.

(3) ETAP Project Files

An ETAP project consists of the following types of files:

- *.mdb
- *.oti
- *.pso (this file exists if OLE objects are created)
- *.cpx (this file exists if cable pulling presentations are created)
- *.grd (this file exists if ground grid systems are created)

ReporTAP uses only *.mdb and *.oti files for creating input data reports. When a ReporTAP project is created a dialog box is displayed for selecting the *.oti file representing the ETAP project. This is similar to opening an existing project in ETAP.

(4) ETAP Output Reports

ETAP creates different MS Access database files after performing different types of analysis. The files created by ETAP have different extensions depending on the type of analysis performed. The file name extensions are described in the table below:

Study Category	File Extension of Output Database	Study Option
SC	SA1 (ANSI Duty)	Duty
	SA2 (ANSI Unbalance)	Half Cycle
		4Cycle
		30Cycle
	SA3 (ANSI 30 Cycle)	30Cycle
	SI1 (IEC Duty)	Duty
	SI2 (IEC Unbalance)	IEC 909
SI3 (IEC Transient)	IEC 363	
LF	LF1 (Load Flow)	Load Flow
MS	MS1 (Motor Start)	Dynamic
		Static
HA	HA1 (Harmonics)	Load Flow
		Frequency Scan
TS	TS1 (Transient Stability)	Transient Stability

ReporTAP version 1.0 uses ETAP report databases with extensions *.SA1, *.SI1 and *.LF1 to generate predefined output reports for short circuit analysis (ANSI & IEC) and load flow analysis respectively.

Chapter 2: Setup

ReporTAP is an ETAP plug-in tool and may be accessed from the “Tools” menu in ETAP. It is also possible to run ETAP as a standalone program.



The steps to setup the ReporTAP menu in ETAP environment, as shown above, are described below.

1. Installing ReporTAP

- 1) Insert the ReporTAP installation CD in the CD drive.
- 2) The setup wizard will automatically start. If it does not start, go to the root directory of the CD using Windows Explorer and double click on the file “Setup.exe”.
- 3) Follow the instructions displayed by the ReporTAP setup wizard.

2. Modifying the “ETAPS.INI” File

Add a new entry to [AppVariables] section in your “ETAPS.INI” file as shown below:

```
[AppVariables]
Tool1=ReporTAP - ETAP Reporting Tool | <AppPathReporTAP> |%p|%d|%o|
<AppPathETAP>\Filters
```

Where:

<AppPathReporTAP> denotes the fully qualified path where ReporTAP has been installed including the ReporTAP executable file name (“ReporTAP.exe”)

Example:

<AppPathReporTAP>=C:\Program Files\ReporTAP10\ReporTAP.exe

<AppPathETAP> denotes the fully qualified path where ETAP has been installed but not including the ETAP executable file name “ETAPS.exe”.

Example:

<AppPathETAP>= C:\ETAP 503

An example of the entry in the INI file is as follows:

Example:

[AppVariables]

**Tool1=ReporTAP - ETAP Reporting Tool |C:\Program
Files\ReporTAP10\ReporTAP.exe|%p|%d|%o|C:\ETAP 503\Filters**

This sample entry is also available in the “ETAPS.INI” file located in the folder “SampleINI” of the installer CD. The “ETAPS.INI” file is usually located in one of the following locations “WINNT” folder, “Windows” folder or the folder in which ETAP is installed.

If “Tool1” is already assigned, the entry may be assigned to “Tool*i*” where “*i*” is the first available tool number less than 20. Refer to “Chapter 4: Preferences – ETAPS.INI” of ETAP user guide or online help for more details.

3. Customizing MS Excel Templates

Follow the instructions in the section 2-(1) of Chapter 1 for customizing the predefined MS Excel report formats to include company logos, titles and fonts. It is recommended to backup the template files before modifications.

Chapter 3: File Menu

1. Open Project

This command is used to open the ETAP project for which reports are to be created, when ReporTAP is used in stand-alone mode. When ReporTAP is run within the ETAP environment (using the ETAP Tools menu), ReporTAP creates reports for the currently open project in the ETAP environment.

Clicking on this command displays the “Open Project File” dialog. The dialog box is used to open an existing ETAP project (*.oti) file in ReporTAP.

When an ETAP project is already selected in ReporTAP, clicking on this command displays the “Report Manager”. If “Report Manager” is already open, no action takes place.

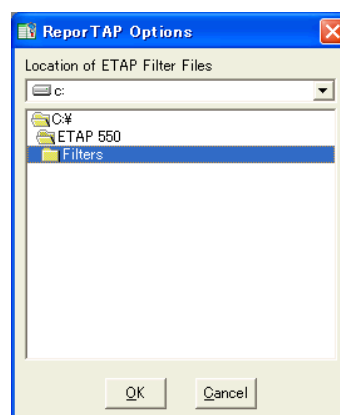
2. Close Project

Selecting this menu will close the currently open project. It is required to close the current project first if user wants to open another ETAP project.

However, if user wants to open another ETAP project, it is recommended to take the following steps to make sure that the data provided on the screen by ETAP and ReporTAP projects maintain consistency each other:

- 1) Exit from ReporTAP
- 2) Close the current ETAP project in ETAP (this step may be skipped.)
- 3) Open a new ETAP project in ETAP
- 4) Call ReporTAP again from ETAP Tools menu

3. Options



ReporTAP utilizes the XML filter files prepared by ETAP for the correspondence between the field names in ETAP project database tables and their narrative descriptions for user's easy understanding.

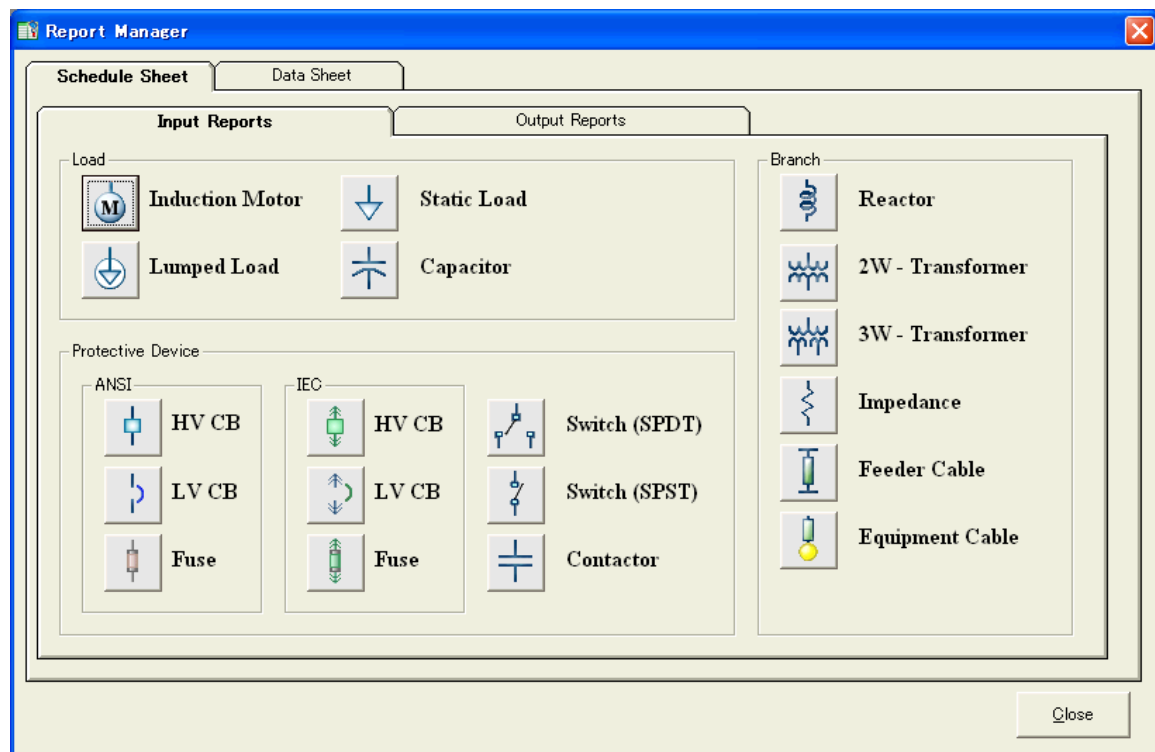
The default path is specified by user in "ETAPS.INI" file as mentioned in the chapter 2-2.

(This feature is applicable to the user-defined form editor which will be implemented in the next version of ReporTAP.)

Chapter 4: Report Manager

Report Manager is a tab-style dialog provided for users to select and open one of the predefined forms to which user retrieves the data from ETAP project or calculation output databases.

Report Manager can be opened from the main menu “Project -> Open Report Manager” or “File -> Open Project” when ETAP project has been already opened in ReportTAP. Maximum 7 forms can be opened at the same time.



Report Manager has the hierarchical tab structures such as “Schedule Sheet” or “Data Sheet”, and “Input Reports” or “Output Reports”. Only “Schedule Sheet” forms are available for ETAP output data (calculation results).



Clicking on each image icon will open the corresponding spread style dialog where ETAP project data will be loaded.

1. Schedule Sheets vs. Data Sheets

Schedule sheet is a spread style form which generally presents more than one records in a sheet. While data sheet is a form style which presents only one record in a sheet

2. Input Reports and Output Reports

Input reports are generated from the input data stored in ETAP project database.

Output reports are generated from the study calculation results stored in ETAP output databases as detailed in the chapter 1-2-(4).

Output reports also refer to the ETAP project database if there is no desired data field in the output database. The reference is made with the key field "ID" (device ID) between them.


Chapter 5: Pre-Defined Forms

1. Common Functions


ReportTAP has 29 pre-defined forms and each form is supported by the common functions such as:

- (1) Read Data
- (2) Date Format
- (3) Report to MS Excel
- (4) Close
- (5) Selection Sort (Ascending & Descending)
- (6) Advanced Sort
- (7) Insert Blank Lines
- (8) Selection Filter
- (9) Advanced Filter

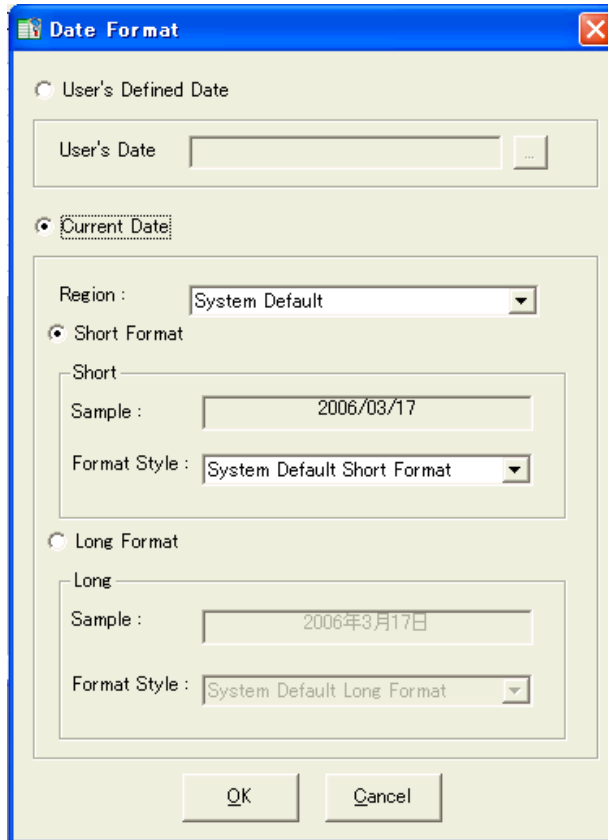
(1) Read Data

By clicking on the icon button  , ReportTAP retrieves data from ETAP project database and/or calculation result databases to the spread form

(2) Date Format

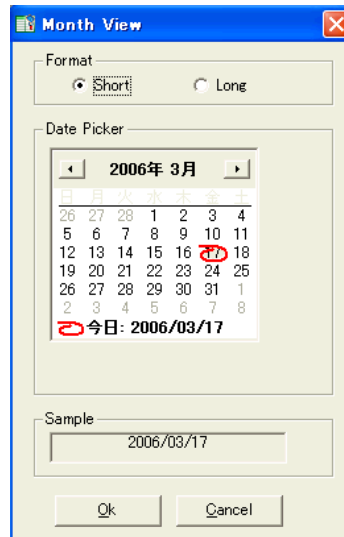
By clicking on the icon button  , the dialog “Date Format” where user can select a desired date and its format to be indicated in the spread form and MS Excel sheet is brought up.

Both “Short” and “Long” format styles are linked to the current settings in Windows Control Panel.



User's Defined Date


By clicking on the ellipsis button (...), a new dialog “Month View” where user can select a desired date if he/she does not like to show today’s date due to a certain reason, and either “Short” or “Long” format is brought up.



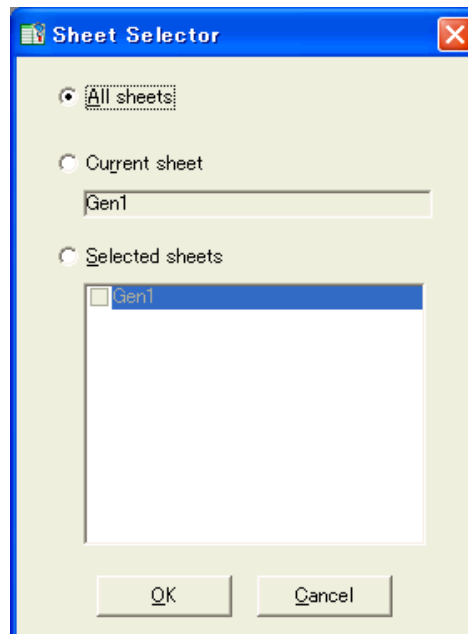
Current Date

Today’s date is shown in the spread form and MS Excel sheet. User can select either “Short” or “Long” format and specify any format style from the pull down list.


(3) Report to MS Excel

After the ETAP data have been loaded to the spread form, the button  becomes enabled.



By clicking on it, the retrieved data in the spread form are exported to MS Excel sheet. In case of Data Sheets such as a synchronous generator, a new dialog to select sheets to be exported to MS Excel appears.




(4) Close

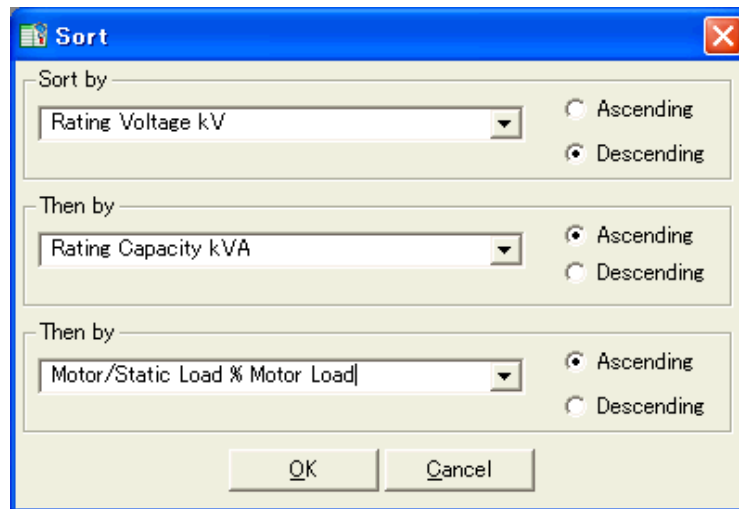
By clicking on the icon button , the currently active spread form is closed.

(5) Selection Sort (Ascending & Descending)

By clicking on the icon button  or , the currently active spread form is sorted in the ascendant or descendant order respectively by the column where the current focus is in.


(6) Advanced Sort

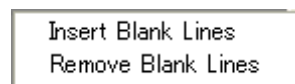
By clicking on the icon button , a new dialog is brought up to setup the sort keys and orders for advanced sorting.





Maximum 3 sort keys can be specified with individual sorting orders.

(7) Insert Blank Lines

By clicking on the down arrow beside the icon , a new selection list appears.




When “Insert Blank Lines” is selected, the status of icon  changes to “Pressed” and blank lines will be inserted between the groups configured as the result of Sort operation after the sort operation is done. When the advanced sort is applied, the blank lines will be inserted between only the groups configured by the first sort key.


When “Remove Blank Lines” is selected, the status of icon  changes to “Un-pressed”. Thereafter, upon execution of any sort operation blank lines will be removed if any (if in prior, blank line were inserted) and sorting will take place.

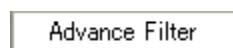
Note: Selecting “Remove Blank Lines” does not immediately remove the existing blank lines.

(8) Selection Filter

By clicking on the icon , the records in the currently active spread form will be filtered according to the value of the currently selected cell.

(9) Advanced Filter

By clicking on the down arrow beside the icon , a new selection list appears.



When “Advanced Filter” is selected, a new dialog is brought up to setup the filter keys for advanced filtering.

Advanced Filter

Filter by

Set Rating Voltage kV >= 0.46 AND

Then by

Set Rating Capacity kVA <= 3500.0 AND

Then by

Set Rating PF (%) < 87.0 AND

Then by

Set

Then by

Set

OK Clear Close

Maximum 5 filter keys can be specified with individual comparative operators (=, <>, >=, <=, >, <) and Boolean operators (AND or OR).

2. Descriptions of 29 Pre-Defined Forms

<General Notes>

- (1) “Substation” column of ReportTAP spread form refers to the ETAP field “Tag #” in “Info” page of the element editor.
- (2) “Notes” column of ReportTAP spread form refers to the ETAP field “Description” in “Info” page of the element editor.

Schedule Sheet – Input Reports

(1) Induction Motor

Form ID: EEC-IndM
MS Excel file: EEC-IndM.xls
ETAP Data Source: Project
IndMotor, IndMotorH1, LoadDefs

Notes:

- 1) “Loading (1)”, “Loading (2)” and “Loading (3)” refer to the values of the first, second and third loading categories respectively in “Nameplate” page of “Induction Machine Editor”.

(2) Lumped Load

Form ID: EEC-Lump
MS Excel file: EEC-Lump.xls
ETAP Data Source: Project
Lump, LumpH1, LoadDefs

Notes:

- 1) “Loading (1)”, “Loading (2)” and “Loading (3)” refer to the values of the first, second and third loading categories respectively in “Nameplate” page of “Lumped Load Editor”.

(3) Static Load

Form ID: EEC-StaticLoad
MS Excel file: EEC-StaticLoad.xls
ETAP Data Source: Project
StaticLoad, StaticLoadH1, LoadDefs

Notes:

- 1) “Loading (1)”, “Loading (2)” and “Loading (3)” refer to the values of the first, second and third loading categories respectively in “Loading” page of “Static Load Editor”.

(4) Capacitor

Form ID: EEC-Capacitor
MS Excel file: EEC-Capacitor.xls
ETAP Data Source: Project
CAP, CAPH1
Notes:
None

(5) Reactor

Form ID: EEC-Reactor
MS Excel file: EEC- Reactor.xls
ETAP Data Source: Project
Reactor, ReactorH1
Notes:
None

(6) 2W Transformer

Form ID: EEC-2W-TR
MS Excel file: EEC-2W-TR.xls
ETAP Data Source: Project
XFMR2, XFMR2H1
Notes:
None

(7) 3W Transformer

Form ID: EEC-3W-TR
MS Excel file: EEC-3W-TR.xls
ETAP Data Source: Project
XFMR3, XFMR3H1
Notes:
None

(8) Impedance

Form ID: EEC-Impedance
MS Excel file: EEC- Impedance.xls
ETAP Data Source: Project
Impedance, ImpedanceH1
Notes:
None

(9) Feeder Cable

Form ID: EEC-Cable-Feeder
MS Excel file: EEC-Cable-Feeder.xls
ETAP Data Source: Project
Cable, CableH1
Notes:
None

(10) Equipment Cable

Form ID: EEC-Cable-Equip
MS Excel file: EEC-Cable-Equip.xls
ETAP Data Source: Project
Cable, CableH1
Notes:
None

(11) High Voltage Circuit Breaker (ANSI standard)

Form ID: EEC-HVCB-ANSI
MS Excel file: EEC-HVCB-ANSI.xls
ETAP Data Source: Project
HVCB, HVCBH1
Notes:
None

(12) High Voltage Circuit Breaker (IEC standard)

Form ID: EEC-HVCB-IEC
MS Excel file: EEC-HVCB-IEC.xls
ETAP Data Source: Project
HVCB, HVCBH1
Notes:
None

(13) Low Voltage Circuit Breaker (ANSI standard)

Form ID: EEC-LVCB-ANSI
MS Excel file: EEC-LVCB-ANSI.xls
ETAP Data Source: Project
LVCB, LVCBH1
Notes:
None

(14) Low Voltage Circuit Breaker (IEC standard)

Form ID: EEC-LVCB-IEC
MS Excel file: EEC-LVCB-IEC.xls
ETAP Data Source: Project
LVCB, LVCBH1
Notes:
None

(15) Fuse (ANSI standard)

Form ID: EEC-Fuse-ANSI
MS Excel file: EEC-Fuse-ANSI.xls
ETAP Data Source: Project
Fuse, FuseH1
Notes:
None

(16) Fuse (IEC standard)

Form ID: EEC-Fuse-IEC
MS Excel file: EEC-Fuse-IEC.xls
ETAP Data Source: Project
Fuse, FuseH1
Notes:
None

(17) Single Pole Single Throw (SPST) Switch

Form ID: EEC-Switch-SPST
MS Excel file: EEC-Switch-SPST.xls
ETAP Data Source: Project
SPSTSwitch, SPSTSwitchH1
Notes:
None

(18) Single Pole Double Throw (SPDT) Switch

Form ID: EEC-Switch-SPDT
MS Excel file: EEC-Switch-SPDT.xls
ETAP Data Source: Project
SPDTSwitch, SPDTSwitchH1
Notes:
None

(19) Contactor

Form ID:	EEC-Contactor
MS Excel file:	EEC- Contactor.xls
ETAP Data Source:	Project Contactor, ContactorH1
Notes:	
None	

Schedule Sheet – Output Reports

(20) Branch Load Flow

Form ID: EEC-BranchLF
MS Excel file: EEC-BranchLF.xls
ETAP Data Source: a) Project
XFMR2H1, CableH1, ReactorH1
b) Calculation Output (*.LF1)
Iconnect, LFSumBranch, LFSumLoss

Notes:

- 1) When you like to show "Percent Loading (%)" value for cables, "Allowable Ampacity (Alert)" -> "User-Defined" needs to be selected and its value needs to be entered in the "Ampacity" page of "Cable" editor. Otherwise, ETAP Load Flow study report shows no data.

(21) Branch Load Flow – 3W-Transformer

Form ID: EEC-BranchLF3WXF
MS Excel file: EEC-BranchLF3WXF.xls
ETAP Data Source: a) Project
XFMR3H1
b) Calculation Output (*.LF1)
LFSumBranch, LFR

Notes:

- 1) ReportTAP shows 2 types of sections in the same sheet. One is for each winding ("3W XFMR p", "3W XFMR s", "3W XFMR t") of 3W transformer to show its rated capacity and calculated %loading. The other section is to show branch load flow through each winding.

(22) Bus Loading

Form ID: EEC-BusLoad
MS Excel file: EEC-BusLoad.xls
ETAP Data Source: a) Project
BusH1
b) Calculation Output (*.LF1)
BusLoadSummary, LFR

Notes:

- 1) Using "Bus Loading" report form, the option "Report" -> "Bus Voltage in Percent" needs to be selected instead of "Bus Voltage in kV" in the "Info" page of "Load Flow Study Case" editor. ReportTAP calculates the actual kV values from the bus nominal voltages and the percent values, but does not calculate the percent values from the bus nominal voltages and the actual kV values.

(23) Short Circuit – Bus base (IEC)

Form ID: EEC-SC-IEC-Bus
MS Excel file: EEC-SC-IEC-Bus.xls
ETAP Data Source: a) Project
Bus, BusH1
b) Calculation Output (*.SI1)
SCIEC3phSum, SCIEC3ph

Notes:

- 1) If more than one protective devices (PD) are connected to the bus, the minimum ratings among those PD's are shown in "Protective Device Rating" columns.
- 2) If more than one protective devices (PD) are connected to the bus, the maximum SC currents among those PD's are shown in "Short-Circuit Results" columns.

(24) Short Circuit – Protective Device base (IEC)

Form ID: EEC-SC-IEC-PD
MS Excel file: EEC-SC-IEC-PD.xls
ETAP Data Source: a) Project
HVCB, HVCBH1, LVCB, LVCBH1,
Fuse, FuesH1
b) Calculation Output (*.SI1)
SCIEC3phSum, SCIEC3ph

Notes:

None

(25) Short Circuit – Bus base (ANSI)

Form ID: EEC-SC-ANSI-Bus
MS Excel file: EEC-SC-ANSI-Bus.xls
ETAP Data Source: a) Project
Bus, BusH1
b) Calculation Output (*.SA1)
SCDSumMom, SCDSumInt

Notes:

- 1) If more than one protective devices (PD) are connected to the bus, the minimum ratings among those PD's are shown in "Protective Device Rating" columns.
- 2) If more than one protective devices (PD) are connected to the bus, the maximum SC currents among those PD's are shown in "Short-Circuit Results" columns.

(26) Short Circuit – Protective Device base (ANSI)

Form ID: EEC-SC-ANSI-PD
MS Excel file: EEC-SC-ANSI-PD.xls
ETAP Data Source: a) Project
HVCB, HVCBH1, LVCB, LVCBH1,
Fuse, FuesH1
b) Calculation Output (*.SA1)
SCDSumMom, SCDSumInt

Notes:
None

Data Sheet – Input Reports**(27) Synchronous Generator**

Form ID: EEC-Generator
MS Excel file: EEC-Generator.xls
ETAP Data Source: Project
SynGen, SynGenH1, Exciter, Governor
Notes:
None

(28) Synchronous Motor

Form ID: EEC-SynM
MS Excel file: EEC-SynM.xls
ETAP Data Source: Project
SynMotor, SynMotorH1, Exciter, LoadDefs

Notes:
1) “Loading (1)”, “Loading (2)” and “Loading (3)” refer to the values of the first, second and third loading categories respectively in “Nameplate” page of “Synchronous Motor Editor”.

(29) 3W Transformer

Form ID: EEC-3W-TR_DS
MS Excel file: EEC-3W-TR_DS.xls
ETAP Data Source: Project
XFMR3, XFMR3H1
Notes:
None

=== End of Document ===