



TRANSFORMER OIL ANALYST™ 3.3 YEAR 2000 COMPLIANCE

Standards Compliance

Transformer Oil Analyst 3.3 is Year 2000 Compliant according to the following criteria, which were adopted from standards published by the Canadian Federal Government and the British Standards Institute:

1. No value of the Windows system date will cause any interruption in operation. The rollover between 31 Dec 1999 and 01 January 2000 is handled properly.
2. Date-based functionality is consistent for dates before, during, and after the year 2000.
3. Date calculations over intervals overlapping or containing the year 2000 are performed correctly.
4. No special date values (e.g. "99" or "00") are reserved to signify special conditions such as "no date."
5. The year 2000 is recognized as a leap year, i.e., 29 February 2000 is a valid date.
6. Date references in the user interface are resolved unambiguously and consistently.
7. Date expressions in *Transformer Oil Analyst 3.3* internally-generated SQL database queries use four-digit years.
8. Unambiguous date representations are used for storage and internal processing of date information.

User Interface Issues

Display and printing. Dates are displayed on the screen and in printed reports according to the user's Windows Short Date format, which is set in the Windows Control Panel. As of TOA 3.3 C build 000112, *Transformer Oil Analyst 3.3* displays and prints 4-digit years in all dates, regardless of how the Windows Short Date format is configured. **The user's choice of date display format does not affect date calculations or the contents of the database.**

Date inputs. Regardless of the user's choice of date display format, all dates imported from a file or entered by the user are accepted "as-is" if they contain 4-digit years. **Date inputs containing 2-digit years are interpreted as referring to the current century** (i.e., the century of the computer's current Windows system date). This behavior is consistent with the ISO 8601:1988 international standard for date information interchange.

ISO date formats accepted. *Transformer Oil Analyst 3.3* first attempts to interpret date inputs according to the user's Short Date format. If a date expression is not interpretable with the user's date format, the software attempts to interpret it according to the ISO 8601 date formats yyyy-mm-dd, yy-mm-dd, yyyymmdd, and yymmdd.

Internal Representation, Storage, and Transfer of Date Information

Internal representation. *Transformer Oil Analyst 3.3* represents dates as Microsoft date serials for all internal processing. A date serial is a double-precision number representing the number of days and fractions of a day since 30 December 1899. For example, noon on 01 January 2000 is represented by the date serial 36526.5. Dates from 01 January 0100 through 31 December 9999 represented as Microsoft date serials are recognized by Microsoft software products.

Storage format. *Transformer Oil Analyst 3.3* database files are in MS Access 2.0 format, in which dates are represented as Microsoft date serials. There are no Year 2000 compliance issues related to MS Access 2.0 data files.

Transfer format. The date format used when exporting data to text files is user-selectable. The ISO 8601 date format yyyy-mm-dd is offered as a preferred option, since that format is always accepted by *Transformer Oil Analyst 3.3* for data imports.

Recommendations

For the next several years, users of *Transformer Oil Analyst 3.3* and related products will be working with data dating from both the 20th and the 21st centuries. We strongly recommend the following practices:

- Whenever possible, use the ISO 8601 date format yyyy-mm-dd for data export and import to avoid any possibility of date format incompatibility or misinterpretation when exchanging *Transformer Oil Analyst* data between computers.
- Always choose the "4-digit years" option when exporting data from *Transformer Oil Analyst 3.3* or when preparing data files for import into it. **Use of 2-digit years for dates in data for any computer application is extremely inadvisable.**
- Configure the Windows Short Date format to use 4-digit years to ensure that unambiguous dates are displayed on the screen and on all reports. This still permits the user to type dates with 2-digit years ("00") for convenience.

Problem Resolution

Delta-X Research wants its products to be as useful, reliable, and simple to use as possible, and we develop new maintenance releases of our software from time to time to correct faults and to introduce improvements. If we or any *Transformer Oil Analyst* users discover any fault in the latest release of the product which causes incorrect results, loss or corruption of data, or significant user inconvenience, we will:

1. Post information about the fault in our Tech Support web site, and
2. Modify the product to correct the fault. Ordinarily, software fixes are distributed in the form of files downloadable from our Tech Support web site at no charge to supported licensees of the current major version (3) of *Transformer Oil Analyst*.

Access to the file downloads section of the Tech Support web site is available only to supported *Transformer Oil Analyst* licensees and to authorized Delta-X Research personnel. It requires registration and the use of a user ID and password issued by Delta-X Research. Delta-X Research reserves the right to establish and enforce reasonable policies regarding access to and use of the Tech Support site. The technical support e-mail address is support@deltaxresearch.com.

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