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To: Distribution
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Subject: Floating point numbers

The EXFOR Formats Manual Chapter 4 introduces “Fixed point numbers with a decimal point” and “Floating point numbers with an exponent”. Because nowadays less and less people use Fortran for programming, the explanation of these terms needs clearer wording for modern users:

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Records containing the numerical data (if more than six fields are used, the data is continued onto successive records). The numerical data *are* FORTRAN *real numbers* readable using a floating-point format.

FORTRAN-readable according to a floating-point format means, in detail:

- A decimal point is always present, even for integers.
- A decimal number without an exponent can have any position within the 11-character field.
- No blank is allowed following a sign (+ or -).
- A plus sign may be omitted, except that of an exponent when there is no E.
- In an exponential notation, the exponent is right adjusted within the 11-character field. The mantissa may have any position.

The values are either zero or have absolute values between 1.0000E-38 and 9.999E+38. The following table contains examples of valid entries:

<i>Language independent floating point numbers</i>		<i>Fortran specific floating point numbers*</i>
<i>numbers without an exponent</i>	<i>numbers with an exponent</i>	
0.14	+0.014E+01	1.4-1
0.14	0.0014E+2	14.+0
0.14	0.0014E2	1.40 -01
+0.14	.0014E+2	14.0 +00
-0.14	-0.140E+00	1.40 E-01
-.14	-.14E0	14.0 E+00
14.7	1.4E-1	

** In Fortran specific floating point numbers, E can be dropped and blanks are allowed within the 11-character field.*

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