

# NAG Fortran Library Routine Document

## F06BLF

**Note:** before using this routine, please read the Users' Note for your implementation to check the interpretation of *bold italicised* terms and other implementation-dependent details.

### 1 Purpose

F06BLF returns the value  $q$  via the function name, where

$$q = \begin{cases} a/b & \text{if } a/b \text{ does not overflow,} \\ 0 & \text{if } a = 0, \\ flmax \times \text{sign}(a/b) & \text{if } a \neq 0 \text{ and } a/b \text{ would overflow.} \end{cases}$$

Here  $flmax$  is the large value given by 1/(X02AMF), and  $\text{sign}(a/0)$  is taken as  $\text{sign } a$ .

### 2 Specification

```
double precision FUNCTION F06BLF (A, B, FAIL)
double precision           A, B
LOGICAL                     FAIL
```

### 3 Description

None.

### 4 References

None.

### 5 Parameters

- |    |   |               |
|----|---|---------------|
| 1: | <i>A</i> – <i>double precision</i><br><i>On entry:</i> the value $a$ .  | <i>Input</i>  |
| 2: | <i>B</i> – <i>double precision</i><br><i>On entry:</i> the value $b$ .  | <i>Input</i>  |
| 3: | FAIL – LOGICAL<br><i>On exit:</i> .TRUE. if $a/b$ would overflow (in which case $ q  = flmax$ ) or $a = b = 0$ (in which case $q = 0$ ); otherwise .FALSE.. | <i>Output</i> |

### 6 Error Indicators and Warnings

None.

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