

**NAME**

**tcsendbreak, tcdrain, tcflush, tcflow** - line control functions

**LIBRARY**

Standard C Library (libc, -lc)

**SYNOPSIS**

```
#include <termios.h>
```

*int*

```
tcdrain(int fd);
```

*int*

```
tcflow(int fd, int action);
```

*int*

```
tcflush(int fd, int action);
```

*int*

```
tcsendbreak(int fd, int len);
```

**DESCRIPTION**

The **tcdrain()** function waits until all output written to the terminal referenced by *fd* has been transmitted to the terminal.

The **tcflow()** function suspends transmission of data to or the reception of data from the terminal referenced by *fd* depending on the value of *action*. The value of *action* must be one of the following:

*TCOOFF*

Suspend output.

*TCOON* Restart suspended output.

*TCIOFF* Transmit a STOP character, which is intended to cause the terminal to stop transmitting data to the system. (See the description of IXOFF in the ‘Input Modes’ section of [termios\(4\)](#)).

*TCION* Transmit a START character, which is intended to cause the terminal to start transmitting data to the system. (See the description of IXOFF in the ‘Input Modes’ section of [termios\(4\)](#)).

The **tcflush()** function discards any data written to the terminal referenced by *fd* which has not been

transmitted to the terminal, or any data received from the terminal but not yet read, depending on the value of *action*. The value of *action* must be one of the following:

*TCIFLUSH* Flush data received but not read.

*TCOFLUSH* Flush data written but not transmitted.

*TCIOFLUSH* Flush both data received but not read and data written but not transmitted.

The **tcsendbreak()** function transmits a continuous stream of zero-valued bits for four-tenths of a second to the terminal referenced by *fd*. The *len* argument is ignored in this implementation.

## RETURN VALUES

Upon successful completion, all of these functions return a value of zero.

## ERRORS

If any error occurs, a value of -1 is returned and the global variable *errno* is set to indicate the error, as follows:

[EBADF] The *fd* argument is not a valid file descriptor.

[EINVAL] The *action* argument is not a proper value.

[ENOTTY] The file associated with *fd* is not a terminal.

[EINTR] A signal interrupted the **tcdrain()** function.

[EWOULDBLOCK] The configured timeout expired before the **tcdrain()** function could write all buffered output.

## SEE ALSO

tcsetattr(3), termios(4), tty(4), comcontrol(8)

## STANDARDS

The **tcsendbreak()**, **tcflyush()** and **tcflyow()** functions are expected to be compliant with the IEEE Std 1003.1-1988 ("POSIX.1") specification.

The **tcdrain()** function is expected to be compliant with IEEE Std 1003.1-1988 ("POSIX.1") when the drain wait value is set to zero with **comcontrol(8)**, or with **ioctl(2)** *TIOCS DRAINWAIT*, or with **sysctl(8)** *kern.tty\_drainwait*. A non-zero drain wait value can result in **tcdrain()** returning

*EWOULDBLOCK* without writing all output. The default value for *kern.tty\_drainwait* is 300 seconds.