

**NAME**

**z** - complex impedance

**LIBRARY**

Electrochemistry (-libecx, -lecx)

**SYNOPSIS**

```
subroutine z(p, w, zout, e, errstat, errmsg)
```

**DESCRIPTION**

Compute the complex impedance for the element *e*.

Parameters:

**o real(dp), intent(in) :: p(:)**

Parameters defining the element *e*

**o real(dp), intent(in) :: w(:)**

Angular frequencies in rad.s-1

**o character(len=1), intent(in) :: e**

Electrochemical element: R, C, L, Q, O, T, G

**o complex(dp), intent(out) :: zout(:)**

Complex impedance in Ohms.

**o integer(int32), intent(out) :: errstat**

Error status

**o character(len=:), intent(out), pointer :: errmsg**

Error message

$$\mathbf{Z}_R(w) = R = \mathbf{p}(1)$$

$$\mathbf{Z}_C(w) = -j/(Cw) = -j/(\mathbf{p}(1)*w)$$

$$\mathbf{Z}_L(w) = jLw = j*j*p(1)*w$$

**RETURN VALUE**

None

**EXAMPLE**

Calling:

```
call z(p, w, zout, e, errstat, errmsg)
```

**SEE ALSO**

ecx(3)