

**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

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

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

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

**RETURN VALUE**

None

**EXAMPLE**

Calling:

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

**SEE ALSO****ecx**(3)