

## `dq_to_abc.xbe`

### Attributes

```
xbe name=dq_to_abc evaluate=yes
Jacobian: variable
input_vars: d q cost sint
output_vars: a b c
aux_vars: alpha beta
iparms:
sparms:
rparms:
stparms:
igparms:
outparms: d q a b c
```

### Description

`dq_to_abc.xbe` employs the following equations to relate the general variables  $d$ ,  $q$ ,  $\text{cost}$ ,  $\text{sint}$  to  $a$ ,  $b$ ,  $c$ :

$$\alpha = d \cos t - q \sin t,$$

$$\beta = d \sin t + q \cos t,$$

$$a = \frac{2}{3} \alpha,$$

$$b = -\frac{1}{3} \alpha + \frac{1}{\sqrt{3}} \beta,$$

$$c = -\frac{1}{3} \alpha - \frac{1}{\sqrt{3}} \beta.$$