

## abc\_to\_dq0\_1.gce

### Attributes

mainvars: xa xb xc xd xq x0 c s

### Description

abc\_to\_dq0\_1.gce employs the following equations to relate the general variables **xa**, **xb**, **xc**, **c**, **s** to **xd**, **xq**, **x0** (where  $\cos \theta$  and  $\sin \theta$  are computed elsewhere (i.e., not within this template) and provided as **c** and **s**, respectively):

$$\begin{bmatrix} x_d \\ x_q \\ x_0 \end{bmatrix} = \frac{2}{3} \begin{bmatrix} \cos \theta & \cos (\theta - 2\pi/3) & \cos (\theta + 2\pi/3) \\ \sin \theta & \sin (\theta - 2\pi/3) & \sin (\theta + 2\pi/3) \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \end{bmatrix} \begin{bmatrix} x_a \\ x_b \\ x_c \end{bmatrix}.$$

AC behaviour is not implemented.