Converter Bus Voltage Control Configuration Attributes

These are the bus voltage control configuration attributes associated with a regenerative converter.

Bus Voltage Set Point

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G Optional - N Voltage Control only - G	Set/SSV	T	REAL	1000 Eq 27	0	∞	Volts

The Bus Voltage Set Point attribute sets the reference voltage used to actively regulate the DC Bus Voltage of the converter when in the Running state and the Bus Voltage Reference Source is set to Manual.

Bus Voltage Reference Source

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - G Voltage Control only	Set/SSV		USINT	0	-	-	Enumeration 0 = Automatic 1 = Manual 2-255 = Reserved

The Bus Voltage Reference Source attribute selects between Automatic and Manual source for the Bus Voltage Reference. Automatic (default) allows the converter to optimize the Bus Voltage Reference for best converter performance. When Manual, the converter uses the user configured Bus Voltage Set Point value for the Bus Voltage Reference signal.

Bus Voltage Loop Bandwidth

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G Voltage Control only	Set/SSV		REAL	0 Eq 24	0	∞	Loop Bandwidth Units

The Bus Voltage Loop Bandwidth attribute value determines the proportional gain, Kbp, of the bus voltage loop that multiplies the Bus Voltage Error signal. This value represents the unity gain bandwidth of the bus voltage loop.

Bus Voltage Integrator Bandwidth

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values

Required - G Voltage Control only	Set/SSV		REAL	0 Eq 24	0	∞	Loop Bandwidth Units

The Bus Voltage Integrator Bandwidth attribute value determines the bus voltage loop integral gain, Kbi, which together with the Kbp, multiplies the integrated Bus Voltage Error signal. This value represents the bandwidth of the bus voltage integrator beyond which the integrator is ineffective. A value of 0 for this attribute disables the integrator.

Bus Voltage Rate Limit

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - G Voltage Control only	Set/SSV		REAL	10^6 Eq 28	0	∞	Volts/Second

The Bus Voltage Rate Limit attribute sets the DC Bus rate limit for the Bus Voltage Set Point that becomes the DC Bus Reference signal when the Bus Voltage Reference Source is set to Manual.

Bus Voltage Error Tolerance

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - B Voltage Control only - G	Set/SSV		REAL	0 Eq 30	0	∞	Volts

The Bus Voltage Error Tolerance attribute determines the absolute maximum Bus Voltage Error value that can be tolerated without causing an Excessive Bus Voltage Error exception.

Bus Voltage Error Tolerance Time

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - B Voltage Control only - G	Set/SSV		REAL	0.01	0	∞	Second

The Bus Voltage Error Tolerance Time attribute determines the maximum amount of time that the Bus Voltage Error Tolerance can be exceeded without generating an exception.

Bus Observer Configuration

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values

Attributes

Converter Current Control Configuration Attributes
Converter Current Control Signal Attributes
Converter Current Reference Configuration Attributes
Converter Current Reference Signal Attributes
Converter Output Attributes
Converter Reactive Power Control Attributes
Converter Types
Current Control Signal Attributes
Current Control Configuration Attributes
Cyclic Read and Cyclic Write
DC Bus Condition Attributes
Device Function Codes
Device Commissioning Attributes
Drive General Purpose I/O Attributes
Drive Output Attributes
Drive Parameters
Event Capture Attributes
Exception Factory Limit Info Attributes
Exception User Limit Configuration Attributes
Exception, Fault and Alarm Attributes
Exceptions
Fault and Alarm Behavior
Feedback Interface Types
Feedback Configuration Attributes
Frequency Control Configuration Attributes
Frequency Control Signal Attribute
General Feedback Info Attributes
General Feedback Signal Attributes
General Linear Motor Attributes
General Motor Attributes
General Permanent Magnet Motor Attributes
General Rotary Motor

Optional - G Voltage Control only	Set/SSV		USINT	0	-	-	Enumeration 0 = Disabled (R) 1 = Bus Observer Only (O) 2 = Bus Observer with Voltage Estimate (O) 3 = Voltage Estimate Only (O) 4-255 = Reserved

The Bus Observer Configuration attribute enumerated value configures the operation of the Bus Observer. The Bus Observer dynamically measures the active current applied to the DC Bus for the purpose of bus impedance compensation. Selecting the Voltage Estimate configures the observer to dynamically estimate voltage based on an internal model of the DC Bus. When Voltage Estimate is selected, this signal is applied to the voltage loop to provide superior control loop performance. The Voltage Estimate may be used in combination with the Bus Observer by selecting Bus Observer with Voltage Estimate.

Bus Observer Bandwidth

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - G Voltage Control only	Set/SSV		REAL	Eq 26	0	∞	Loop Bandwidth Units

The Bus Observer Bandwidth attribute value determines the proportional gain, Kbop, of the Bus Observer. This value represents the unity gain bandwidth of the Bus Observer.

Bus Observer Integrator Bandwidth

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - G Voltage Control only	Set/SSV		REA	0	0	∞	Loop Bandwidth Units

The Bus Observer Integrator Bandwidth attribute value determines the Bus Observer integral gain, Kboi, that together with the Kbop, multiplies the integrated error signal within the observer. This value represents the bandwidth of the integrator beyond which the integrator is ineffective. A value of 0 for this attribute disables the integrator.

See also

Converter Current Reference Signal Attributes

How are we doing?