Motion Database Storage Attributes

The following are the Motion Database Storage attributes associated with a Motion Control Axis.

System Acceleration Base

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C	Set		REAL	0 DB	0	∞	Motor Units/sec^2 @ 100 % Rated

This floating point value represents the acceleration of the selected unloaded motor based on 100% Rated current and used to compute System Inertia. This attribute is used to store the original System Acceleration value for subsequent upload.

Drive Model Time Constant Base

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C	Set		REAL	.0015 DB	0	∞	Sec

This floating point value represents the lumped model time constant associated with the drive device for the purposes of computing loop gains. This attribute is used to store the original Drive Model Time Constant value for subsequent upload. The Drive Model Time Constant Base (DMTC_Base) is computed based on the current loop bandwidth, the velocity loop update time and the feedback sample period according to the following formula:

DMTC_Base = 2 * 1/(2*PI*Current Loop Bandwidth(Hz)) + Velocity Loop Update Period + Feedback Sample Period/2

Drive Rated Peak Current

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C	Set		REAL	0 DB	0	∞	Amps

This floating point value represents the peak current rating associated with the drive device and used to compute peak torque and acceleration limits. This attribute is used to store the original Drive Rated Peak Current value for subsequent upload.

Bus Overvoltage Operational Limit

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Set		REAL	0 DB	0	∞	Volts

This floating point value represents the maximum DC Bus voltage level that can be

sustained during drive operation, which is used to calculate the factory default value for PM Motor Rotary Bus Overvoltage Speed or the PM Motor Linear Bus Overvoltage Speed associated with PM motor types. This attribute is used to store the Bus Overvoltage Operational Limit value used in this calculation for subsequent upload.

Converter Model Time Constant Base

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Set		REAL	0.001 DB	0	∞	Seconds

This floating point value represents the lumped model time constant associated with the regenerative converter device for the purposes of computing loop gains. This attribute is used to store the original Converter Model Time Constant value for subsequent upload. The Converter Model Time Constant Base is computed based on the converter current loop bandwidth, the bus voltage loop update time and the bus voltage feedback sample period according to the following formula:

CMTC_Base = 2 * 1/(2*PI*Current Loop Bandwidth(Hz)) + Bus Voltage Loop Update Period

Converter Current Loop Bandwidth Base

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	Hz

This floating point value represents the default bandwidth for the active and reactive current loops for the regenerative converter. This attribute is used to store the original default Converter Current Loop Bandwidth value that was used to compute the Converter Model Time Constant that is the basis for tuning the converter.

Converter Rated Current

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	Amps

This floating point value represents the continuous output current rating associated with the regenerative converter and used to compute the System Capacitance scaling attribute value from the Total Capacitance of the DC Bus. This attribute is used to store the original Converter Rated Current value for subsequent upload.

Converter Rated Peak Current

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	Amps

This floating point value represents the peak output current rating associated with the regenerative converter and used together with the Converter Rated Current to compute the default Converter Current Vector Limit attribute value. This attribute is used to store the original Converter Rated Peak Current value for subsequent upload.

Converter Rated Voltage

Converter Rated Voltage

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	Volts (RMS)

This floating point value represents the input voltage rating associated with the regenerative converter and used to compute the Bus Voltage Set Point attribute value. This attribute is used to store the original Converter Rated Voltage value for subsequent upload.

Converter DC Bus Capacitance

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	µF (Amps)

This floating point value represents the internal bus capacitance of the regenerative converter and is used to compute the System Capacitance scaling attribute. This attribute is used to store the original Converter DC Bus Capacitance value for subsequent upload.

Converter Rated Power

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - G	Set		REAL	0 DB	0	∞	kVA

This floating point value represents the power rating of the converter. This attribute is used to estimate the default AC Line Source Power value.

Current Loop Bandwidth Scaling Factor

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C	Set		REAL	0 DB	0	∞	

This floating point value represents the scaling factor, based on motor type, which is used to set the factory default value for Torque Loop Bandwidth. This attribute is used to store the original Current Loop Bandwidth Scaling Factor value for subsequent upload.

Drive Rated Voltage

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - D	Set		REAL	0 DB	0	∞	V_{rms}

This floating point value represents the RMS voltage rating of the drive that is used to set the factory default value for the Break Voltage associated with V/Hz drives. This attribute is used to store the original Drive Rated Voltage value for subsequent upload.

Max Output Frequency

Max Output Frequency

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - D	Set		REAL	0 DB	0	∞	Hz

This floating point value represents the maximum frequency rating of the drive that is used to set the factory default values for Velocity Limits. This attribute is used to store the original Max Output Frequency value for subsequent upload.

See also

Auto-Tune Configuration Attributes

Motor Test Result Attributes

Hookup Test Result Attributes

Inertia Test Result Attributes

Converter Bus Voltage Control Configuration Attributes

- Select/Limit Instructions
- Sequential Function Chart (SFC) Instructions
- Statistical Instructions
- Safety Instructions
- Studio 5000 Logix Designer Glossary

How are we doing?