Current Control Signal Attributes

These are the current control signal related attributes associated with a Motion Control Axis.

Current Command

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

The Current Command attribute represents the instantaneous value of the commanded torque producing current signal, Iq, prior to passing through the vector current limiter. It is tied directly to the output of torque reference path after the 1/Kt scaling that represents the torque effort to be applied to the drive's torque producing Iq current loop. The nominal value for 1/Kt is 1 based on 100% rated torque being produced by 100% rated current.

Operative Current Limit

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - D	Get/GSV	T	REAL	-	-	-	% Motor Rated

The Operative Current Limit attribute represents the operative current limit based on multiple limit sources.

Current Limit Source

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - D	Get/GSV	T	DINT	-	-	-	Enumeration 0 = Not Limited 1 = Inverter Peak Current Limit 2 = Motor Peak Current Limit 3 = Inverter Thermal Current Limit 4 = Motor Thermal Current Limit 5 = Shunt Regulator Limit 6 = Current Vector Limit 7 = Brake Test Limit 8-127 = Reserved 128-255 = Vendor Specific

The Current Limit Source attribute represents the operative source of a current limit when a current limit condition occurs.

Motor Electrical Angle

Motor Electrical Angle

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Required - C PM Motor	Get/GSV	T	REAL	-	-	-	Degrees

The Motor Electrical Angle attribute is the calculated electrical angle of the motor based on motor pole count, commutation offset, and selected feedback device.

Current Reference

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

The Current Reference attribute is the current reference signal, Iq, into the torque current loop summing junction.

Flux Current Reference

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

The Flux Current Reference attribute is the current reference signal, Id, into the flux producing current loop summing junction.

Current Disturbance

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Set/SSV	T	REAL	-	-	-	% Motor Rated

Injected torque producing current command used to excite motor as part of Frequency Analysis service.

Current Error

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

Error between commanded and actual current that is the output of the torque producing, q-axis, current loop summing junction.

Flux Current Error

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

Error between commanded and actual current that is the output of the flux producing, d-axis, current loop summing junction.

Current Feedback

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

Actual torque current applied to the axis based on current sensor feedback.

Flux Current Feedback

Usage	Access	T	Data Type	Default	Min	Max	Semantics of Values
Optional - C	Get/GSV	T	REAL	-	-	-	% Motor Rated

Actual flux current applied to the axis based on current sensor feedback.

See also

Current Control Configuration Attributes

CIP Axis Attributes

- Select/Limit Instructions
- Sequential Function Chart (SFC) Instructions
- Statistical Instructions
- Safety Instructions

Studio 5000 Logix Designer Glossary

How are we doing?