Programming: Current and Temperature Control

**Programming: Current Limit Control**

**Current Limit Control**

AMPS = exp \ Set current limit, 0 to 1000

In some applications, were the motor to misapply full power, the mechanism could be damaged. It can be use-
amount of current, and therefore torque, the motor can put out. Use the ‘AMPS’ command with a number, vari-
within the range of 0 to 1000. The units are tenths of percent of full scale peak current, which varies with moto-

**Motor and load protection features:**

The SmartMotorTM servo motor is equipped with several protection features and diagnostic tools that allow the di-
dagnostic functions on the load. These are broken down into power limit, temperature and power monitoring fi-

**Peak Power Limit**

The internal peak power limit of the SmartMotorTM servo motor is set by the AMPS command. This function c-
but the amount of power that is delivered to the motor coils. Note that this means that the AMPS command can-
output torque, but maximum speed, as well.

The valid range of the AMPS command is 0 through 1023. The default setting is 1000. For example, a setting AMPS=512

and speed, the value of AMPS must be set to 1023.

AMPS is can be assigned to a variable. For example,

i = AMPS

will store the value of AMPS in the variable i.

**Programming: Temperature Limit Control**

**RMS Power and Temperature Limits**

The RMS power consumption is constantly monitored by the SmartMotorTM servo motor. If the RMS power ex-
rating of the SmartMotorTM servo motor for a programmable amount of time, the amplifier will shut down and i-
(see status bit Bh). This programmable time is set by the THD function. The valid range for THD is 0 through 65535-
samples. For example,

THD = 4069

will set the thermal shut down delay to one second. This means that the RMS input power must exceed the sp-
before the amplifier will shut down. The default value for THD is 12000, or approximately three seconds.

THD is can not be assigned to a variable.

Furthermore, the SmartMotorTM servo motor monitors its internal temperature. If the internal temperature exc-
set point, the amplifier shuts down and indicates an overheat error (see status bit Bh). The SmartMotorTM ser-
an overheat condition until the internal temperature drops 5 degrees C below the programmable set point. Thi:
by the function TH. The valid range for TH is 0 to 70, with units in degrees Celsius. For example, if

\[ \text{TH} = 50 \]

the amplifier will indicate an overheat if the internal temperature reaches 50 degrees C and will come out of the
when the temperature falls below 45 degrees C. The default value for TH is 70. THD can be assigned to a va

\[ t = \text{TH} \]

will assign the value of TH to the variable t.

**Power and Temperature Monitoring**

The Temperature and RMS power of the SmartMotor™ servo motor can be monitored for diagnostic, prevent; other reasons. The real time temperature is read by the TEMP function and is given in units of degrees Celsius: assigning it to a variable. For example,

\[ t = \text{TEMP} \]

will assign the internal temperature to the variable t.

The bus voltage is monitored by the user J analog input via the UJA function. User J is not physically accessib UJA will provide the input bus voltage in tenths of volts. The accuracy of the reading is +1VDC. For example,

\[ v = \text{UJA} \]

will assign the input voltage to the variable v. If the reading is 336, the input voltage is 33.6+1 VDC.

The RMS current is monitored by the user I analog input via the UIA function. User I is not physically accessibl UIA will provide the measured RMS current in hundredths of ampere. The accuracy of the reading is 0.1A. Fo

\[ i = \text{UIA} \]

will assign the RMS current to the variable i. If the reading is 234, the measured current is 2.34+/0.1 Amps.