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
diagnostic functions on the load. These are broken down into power limit, temperature and power monitoring f

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 ca
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
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. This

by the function TH. The valid range for TH is 0 to 70, with units in degrees Celsius. For example, if

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=TH

will assign the value of TH to the variable t.

Power and Temperature Monitoring

The Temperature and RMS power of the SmartMotorTM 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 Celsiu
assigning it to a variable. For example,

t=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=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=UIA will assign the RMS current to the variable i. If the reading is 234, the measured current is 2.34+/-0.1 An