



System NANO Programming Reference

090399

Register of the N-SM1D Module

Pattern of the Register Numbers

1xyzz x stands for the slot number of intell. modules:
2, 3, 4 (1=CPU)
y stands for the axis number.
zz stands for register number 0 .. 99

Pattern of the Axis Numbers

xy x stands for the slot number of intelli modules:
2, 3, 4 (1=CPU)
y stands for the axis number = in this case it is
always 1

1x100 Status Register
Bit0 referenced?
Bit1 has AXARR position been reached?
Bit2 has the axis reached the dest. window?
Bit4 negative limit switch active?
Bit5 positive limit switch active?
Bit6 home sensor active?
Bit7 software limit switch active?
Bit8 hardware limit switch was active

Bit11 amplifier active?

Bit12 reference run error?
Bit13 BUSY (only for commands 9 to 12)
Bit14 software limit switch enable
(activating by setting the bit)

Bit16 axis is inside the stop ramp
Bit19 undervoltage (U<)
Bit20 short circuit (I>)
Bit21 over-temperature (T>)

1x101 command register
0 AXARR with stop ramp
1 activate amplifier
2 deactivate amplifier
3 set reference
4 clear reference
5 stop axis without stop ramp
9 automatic reference run, -> +, consider ref.
10 automatic reference run, -> -, consider ref.
11 automatic reference run, -> +, ignore ref.
12 automatic reference run, -> -, ignore ref.
17 relative positioning
18 absolute positioning (default)
19 continue interrupted positioning
20 relative positioning with start input - ON
21 relative positioning with start input - OFF
22 activate stop at reference position (default)
23 deactivate stop at reference position
56 endless positioning in positive direction
57 endless positioning in negative direction
1x102 nominal position
1x103 nominal speed
1x104 polarities of limit switches and home sensors
1x105 start ramp
1x106 stop ramp
1x107 destination window
1x108 start-/stop frequency
1x109 actual axis position
1x111 present step frequency
1x114 position of the positive software limit switch
1x115 position of the negative software limit switch
1x121 scaling for the max. step frequency
1y122 motor phase current! Check before switching on!
1x123 step resolution
1x124 current lowering (time)
1x125 current lowering (current value)
1x167 relative position for positioning with start input
1x168 absolute position of the latest positioning run

1x199 software version number

Description of N-SM1D Connections

<i>Module Power Supply</i>		
<i>Term. X1 (POWER LOGIC)</i>	<i>Signal</i>	<i>Remarks</i>
0V	Gnd	connected to ground potential
+24V	24 V	

<i>Motor Connection</i>		
<i>Term. X2 (MOTOR)</i>	<i>Signal</i>	<i>Remarks</i>
0V	Gnd	connected to ground potential
A	motor phase 1 (+)	feed line
-A	motor phase 1 (-)	return line
B	motor phase 2 (+)	feed line
-B	motor phase 2 (-)	return line

Caution!

Twist feed and return line per phase!

Only use shielded cables. Shield both cable ends
extensively!

<i>Motor Operation Voltage</i>		
<i>Term.. X3 (DC- POWER)</i>	<i>Signal</i>	<i>Remarks</i>
0V	Gnd	connected to ground potential
+70V	intermediate circuit voltage	value: 24 to 70 V

Caution!

Twist feed and return line!

<i>Control Inputs</i>		
<i>Term.. X4 (INPUT)</i>	<i>Signal</i>	<i>Remarks</i>
OV	positive limit switch	24V DC / 2,8 kΩ
A	negative limit switch	24V DC / 2,8 kΩ
REF	home sensor	24V DC / 2,8 kΩ

CAN System Bus

The NANO modules are connected via CAN system bus.
The pins are occupied as follows:

CMODE0	1	_____	1
CANL	2	_____	2
Gnd	3	_____	3
CMODE1	4	_____	4
TERM	5	_____	5
Not Occup.	6		6
CANH	7	_____	7
Not Occup.	8		8
5 VDC	9	_____	9

9-pin sub-D male conn.

9-pin sub-D fem. conn.