

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading Machine Data (%PCP, %TEA1, %TEA2, %PCA) using
an **IBM compatible P.C.**

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(english)

Computer : IBM compatible P.C.

Cable IBM compatible P.C. <--> SINUMERIK 810M :

IBM compatible P.C.

SINUMERIK 810M



Connector DB 25 Female

Connector DB 25 Male

Attn. Sten

M.v.h.

Max

Software Division

SIEMENS 810

In order to explain in a clear way how one uses this control let's look at an transmission/reception example with these parameters

Baud rate	9600
Stop bit	2
Data bit	7
Parity	EVEN
Door	Com1
Protocol	Xon/Xoff

CTS only.

Position parameters on the control.

Turn on the numeric control.

Select the option SETTING DATA

Select the option >

Select the option SETTING BITS. At this point a table will appear with N bytes; 7 of these serve for the adjustment of the peripheral apparatuses. Let's look now at the value assigned to these bytes:

5010 ----> 00000001
5012 ----> 00000001

5011 ----> 11010111 indicates transmission parameters 11000100
5013 ----> 11010111 11000100

5014 ----> 00010001
5015 ----> 00010011
5016 ----> 10001000

and finally 00101000

5026 ----> 00000011
5028 ----> 00000011

prepare the control to receive

After having set the bits return to the main menu



Select DATA IN/OUT (you enter in a new menu)

Manual CMS-COMM

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading **all Machine Data** (%PCP, %TEA1, %TEA2, %PCA)
using an IBM compatible P.C.

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(english)

- 1.1 Power ON the Numerical Control keeping pressed the **DIAGNOSTIC AND STARTUP** key ().
When the Startup sequence has been completed release the **DIAGNOSTIC AND STARTUP** key () and perform the following selections.
CAUTION : THE FOLLOWING SEQUENCES WILL CLEAR ALL PART-PROGRAMS AND TRASMISSION BITS !

1.2 MACHINE DATA *(Comm. initial)*

1.3 CLEAR (keep pressed until appear the mark: V)
NC MD

1.4 LOAD (keep pressed until appear the mark: V)
NC MD

1.5 CLEAR (keep pressed until appear the mark: V)
PLC MD

1.6 LOAD (keep pressed until appear the mark: V)
PLC MD

1.7 Change the screen pressing the key: /\

1.8 PLC
INITIAL

1.9 CLEAR (keep pressed until appear the mark: V)
PLC

1.10 CLEAR (keep pressed until appear the mark: V)
FLAGS

1.11 Change the screen pressing the key: /\

1.12 NC DATA *(NC. initial)*

1.13 FORMAT (keep pressed until appear the mark: V)
USER M.

- 1.14 Change the screen pressing the key: /\
- 1.15 Perform the selection: DATA IN-OUT
- 1.16 Set the transmission bits: 5011 = 1100 0100
5013 = 1100 0100
5016 = 0010 1000
- 1.17 Select: - DATA IN
- INTERFACE NO. FOR DATA-IN: 1

- 2.1 Insert in an IBM compatible P.C. the disk containing the Machine Data (%PCP, %TEA1, %TEA2, %PCA) which has been shipped with the machine.
- 2.2 On the PC perform the necessary operations in order to have:
A:\>
- 2.3 On the PC type: CMSIO
- 2.4 After a few seconds appears: MENU I/O 810M
1 INPUT FILE
2 OUTPUT FILE
3 PRECEDING MENU
- 2.5 Select: 2
- 2.6 On the PC screen appears: I/O NUMERICAL CONTROL
PRESENT DRIVE A ?
- 2.7 On the PC press: RETURN
- 2.8 On the PC screen appears: I/O NUMERICAL CONTROL
FILE NAME ?
- 2.9 In order to load the %PCP File type: %PCP
- 2.10 On the PC screen appears: ENABLE C.N.C.
ENTER TO START
- 2.11 At this point on the N.C. 810M press START
On the first line of N.C. 810M appears the writing DIO
- 2.12 On the PC press: RETURN
- 2.13 On the Data type line of N.C. 810M must appear PCP
- 2.14 At the end of transmission the writings DIO and PCP disappear from the N.C. 810M screen: this means the %PCP File has been loaded into the N.C.
- 2.15 On the PC appears: END OF TRANSMISSION
PRESS ANY KEY TO GO BACK TO THE MAIN MENU
- 2.16 Press: RETURN
- 2.17 In order to load the %TEA1 and %TEA2 Files repeat from point 2.5 to point 2.16 typing at point 2.9 the name of the File which has to be loaded.

- 3.1 In order to load the %PCA File select on the N.C.:
- 3.2 NC DATA *(CNC.initial)*
- 3.3 FORMAT (keep pressed until appear the mark: V)
USER M.

3.4 CLEAR (keep pressed until appear the mark: V)
PART PR

3.5. FORMAT (keep pressed until appear the mark: V)
AL-TEXT

3.6 Change the screen pressing the key: /\

3.7 Perform the selection: DATA IN-OUT

3.8 Set the transmission bits: 5011 = 1100 0100
5013 = 1100 0100
5016 = 0010 1000

3.9 Select: - DATA IN
- INTERFACE NO. FOR DATA-IN: 1

4.1 At this point in order to load the %PCA File repeat from point 2.4 to point 2.16 typing at point 2.9 the name %PCA.

4.2 On the N.C. return to the main menu with /\ then Power OFF the N.C 810M and Power it ON normally.

5.1 After Power ON the N.C. 810M in the normal way, perform the following operations.

5.2 SETTING
DATA

5.3 AXIAL Dry Run Set: 3000
Minimum working area
Set: X -99999999 Y -99999999
Z -99999999 (A -99999999)
Maximum working area
Set: X 99999999 Y 99999999
Z 99999999 (A 99999999)

5.4 Change the screen pressing the keys: /\ and >

5.5 SPINDLE Spindle speed limitation Set: S 1800



5.6 Change the screen pressing the key: /\

5.7 Set again the transmission bits, reload the machining programs, the tool compensations and zero offsets (origins) into N.C. according to the normal procedures.

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading **%PCP** using an IBM compatible P.C.

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(english)

- 6.1 Power ON the Numerical Control keeping pressed the **DIAGNOSTIC AND STARTUP** key ().
When the Startup sequence has been completed release the **DIAGNOSTIC AND STARTUP** key () and perform the following selections.
NOTE : Pay attention to perform only and solely the operations described.
CAUTION : THE FOLLOWING SEQUENCES WILL CLEAR ALL TRASMISSION BITS !

6.2 PLC
INITIAL

6.3 CLEAR (keep pressed until appear the mark: V)
PLC

6.4 CLEAR (keep pressed until appear the mark: V)
FLAGS

6.5 Change the screen pressing the key: /\

6.6 Perform the selection: DATA IN-OUT

6.7 Set the transmission bits: 5011 = 1100 0100
5013 = 1100 0100
5016 = 0010 1000

6.8 Select: - DATA IN
- INTERFACE NO. FOR DATA-IN: 1

7.1 Insert in an IBM compatible P.C. the disk containing the Machine Data (%PCP, %TEA1, %TEA2, %PCA) which has been shipped with the machine.

7.2 On the PC perform the necessary operations in order to have:
A:\>

7.3 On the PC type: CMSIO

7.4 After a few seconds appears: MENU I/O 810M
1 INPUT FILE
2 OUTPUT FILE
3 PRECEDING MENU

7.5 Select: 2

7.6 On the PC screen appears: I/O NUMERICAL CONTROL
PRESENT DRIVE A ?

7.7 On the PC press: RETURN

7.8 On the PC screen appears: I/O NUMERICAL CONTROL
FILE NAME.?



- 7.9 In order to load the **%PCP File** type: **%PCP**
- 7.10 On the PC screen appears: **ENABLE C.N.C.**
 ENTER TO START
- 7.11 At this point on the N.C. 810M press **START**
On the first line of N.C. 810M appears the writing **DIO**
- 7.12 On the PC press: **RETURN**
- 7.13 On the **Data type** line of N.C. 810M must appear **PCP**
- 7.14 At the end of transmission the writings **DIO** and **PCP** disappear
from the N.C. 810M screen: this means the **%PCP File** has been
loaded into the N.C.
- 7.15 On the PC appears: **END OF TRANSMISSION**
 PRESS ANY KEY TO GO BACK TO THE MAIN MENU
- 7.16 Press: **RETURN**
- 7.17 On the N.C. return to the main menu with **/** then **Power OFF** the
N.C 810M and **Power it ON** normally.
Now the N.C. is ready to work.

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading %TEA1 using an IBM compatible P.C.

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(english)

- 8.1 Power ON the Numerical Control keeping pressed the **DIAGNOSTIC AND STARTUP** key ().
When the Startup sequence has been completed release the **DIAGNOSTIC AND STARTUP** key () and perform the following selections.
NOTE : Pay attention to perform only and solely the operations described.
CAUTION : THE FOLLOWING SEQUENCES WILL CLEAR ALL TRASMISSION BITS !

- 8.2 Perform the selection: **DATA IN-OUT**
8.3 Set the transmission bits: 5011 = 1100 0100
5013 = 1100 0100
5016 = 0010 1000
8.4 Select: - **DATA IN**
- **INTERFACE NO. FOR DATA-IN: 1**
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- 9.1 Insert in an IBM compatible P.C. the disk containing the Machine Data (%PCP, %TEA1, %TEA2, %PCA) which has been shipped with the machine.
9.2 On the PC perform the necessary operations in order to have:
A:\>
9.3 On the PC type: **CMSIO**
9.4 After a few seconds appears: MENU I/O 810M
1 INPUT FILE
2 OUTPUT FILE
3 PRECEDING MENU
9.5 Select: 2
9.6 On the PC screen appears: I/O NUMERICAL CONTROL
PRESENT DRIVE A ?
9.7 On the PC press: **RETURN**
9.8 On the PC screen appears: I/O NUMERICAL CONTROL
FILE NAME ?
9.9 In order to load the %TEA1 File type: %TEA1
9.10 On the PC screen appears: ENABLE C.N.C.
ENTER TO START
9.11 At this point on the N.C. 810M press **START**
On the first line of N.C. 810M appears the writing **DIO**
9.12 On the PC press: **RETURN**
9.13 On the **Data type** line of N.C. 810M must appear **TEA1**

9.14 At the end of transmission the writings DIO and TEA1 disappear from the N.C. 810M screen: this means the %TEA1 File has been loaded into the N.C.

9.15 On the PC appears: END OF TRANSMISSION
 PRESS ANY KEY TO GO BACK TO THE MAIN MENU

9.16 Press: RETURN

10.1 On the N.C. 810M change the screen pressing the key: /\

10.2 NC
 DATA

10.3 FORMAT (keep pressed until appear the mark: V)
 USER M.

10.4 CLEAR (keep pressed until appear the mark: V)
 PART PR

10.5 On the N.C. return to the main menu with /\ then Power OFF the N.C 810M and Power it ON normally.

11.1 After Power ON the N.C. 810M in the normal way, perform the following operations.

11.2 SETTING
 DATA

11.3 AXIAL Dry Run Set: 3000
 Minimum working area
 Set: X -99999999 Y -99999999
 Z -99999999 (A -99999999)
 Maximum working area
 Set: X 99999999 Y 99999999
 Z 99999999 (A 99999999)

11.4 Change the screen pressing the keys: /\ and >

11.5 SPINDLE Spindle speed limitation Set: S 1800



11.6 Change the screen pressing the key: /\

11.7 Set again the transmission bits, reload the machining programs, the tool compensations and zero offsets (origins) into N.C. according to the normal procedures.

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading **%TEA2** using an IBM compatible P.C.

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(english)

- 12.1 Power ON the Numerical Control keeping pressed the **DIAGNOSTIC AND STARTUP** key ().
When the Startup sequence has been completed release the **DIAGNOSTIC AND STARTUP** key () and perform the following selections.
NOTE : Pay attention to perform only and solely the operations described.
CAUTION : THE FOLLOWING SEQUENCES WILL CLEAR ALL TRASMISSION BITS !

- 12.2 Perform the selection: **DATA IN-OUT**
12.3 Set the transmission bits: 5011 = 1100 0100
5013 = 1100 0100
5016 = 0010 1000
12.4 Select: - **DATA IN**
- **INTERFACE NO. FOR DATA-IN: 1**
-

- 13.1 Insert in an IBM compatible P.C. the disk containing the Machine Data (%PCP, %TEA1, %TEA2, %PCA) which has been shipped with the machine.
13.2 On the PC perform the necessary operations in order to have:
A:\>
13.3 On the PC type: **CMSIO**
13.4 After a few seconds appears: MENU I/O 810M
1 INPUT FILE
2 OUTPUT FILE
3 PRECEDING MENU
13.5 Select: 2
13.6 On the PC screen appears: I/O NUMERICAL CONTROL
PRESENT DRIVE A ?
13.7 On the PC press: **RETURN**
13.8 On the PC screen appears: I/O NUMERICAL CONTROL
FILE NAME ?
13.9 In order to load the **%TEA2** File type: **%TEA2**
13.10 On the PC screen appears: **ENABLE C.N.C.**
ENTER TO START
13.11 At this point on the N.C. 810M press **START**
On the first line of N.C. 810M appears the writing **DIO**
13.12 On the PC press: **RETURN**
13.13 On the **Data type** line of N.C. 810M must appear **TEA2**

13.14 At the end of transmission the writings DIO and TEA2 disappear from the N.C. 810M screen: this means the %TEA2 File has been loaded into the N.C.

13.15 On the PC appears: END OF TRANSMISSION
 PRESS ANY KEY TO GO BACK TO THE MAIN MENU



13.16 Press: RETURN

13.17 On the N.C. return to the main menu with /\ then Power OFF the N.C 810M and Power it ON normally.
Now the N.C. is ready to work.

SINUMERIK 810M-GA1/GA2 (+ IBM compatible P.C.)

Loading **%PCA** using an IBM compatible P.C.

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(english)

- 14.1 Power ON the Numerical Control keeping pressed the **DIAGNOSTIC AND STARTUP** key ().
When the Startup sequence has been completed release the **DIAGNOSTIC AND STARTUP** key () and perform the following selections.
NOTE : Pay attention to perform only and solely the operations described.
CAUTION : THE FOLLOWING SEQUENCES WILL CLEAR ALL TRASMISSION BITS !

14.2 NC
DATA

14.3 **FORMAT** (keep pressed until appear the mark: V)
AL-TEXT

14.4 Change the screen pressing the key: /\

14.5 Perform the selection: **DATA IN-OUT**

14.6 Set the transmission bits: **5011 = 1100 0100**
5013 = 1100 0100
5016 = 0010 1000

14.7 Select: - **DATA IN**
- **INTERFACE NO. FOR DATA-IN: 1**

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- 15.1 Insert in an IBM compatible P.C. the disk containing the Machine Data (%PCP, %TEA1, %TEA2, %PCA) which has been shipped with the machine.
15.2 On the PC perform the necessary operations in order to have:
A:\>
15.3 On the PC type: **CMSIO**
15.4 After a few seconds appears: **MENU I/O 810M**
1 INPUT FILE
2 OUTPUT FILE
3 PRECEDING MENU
15.5 Select: **2**
15.6 On the PC screen appears: **I/O NUMERICAL CONTROL**
PRESENT DRIVE A ?
15.7 On the PC press: **RETURN**
15.8 On the PC screen appears: **I/O NUMERICAL CONTROL**
FILE NAME ?
15.9 In order to load the **%PCA** File type: **%PCA**
15.10 On the PC screen appears: **ENABLE C.N.C.**
ENTER TO START

- 15.11 At this point on the N.C. 810M press **START**
On the first line of N.C. 810M appears the writing **DIO**
- 15.12 On the PC press: **RETURN**
- 15.13 On the **Data type** line of N.C. 810M must appear **PCA**
- 15.14 At the end of transmission the writings **DIO** and **PCA** disappear from the N.C. 810M screen: this means the %PCA File has been loaded into the N.C.
- 15.15 On the PC appears: **END OF TRANSMISSION**
PRESS ANY KEY TO GO BACK TO THE MAIN MENU
- 15.16 Press: **RETURN**
- 15.17 On the N.C. return to the main menu with **/** then Power OFF the N.C 810M and Power it ON normally.
Now the N.C. is ready to work.