



PARAMETERS TO BE USED IN SYSTEMS WITH FAGOR LINEAR ENCODERS & CNC

In this issue and followings we are going to present a list of the most relevant parameters of the CNC FAGOR in relation with its connection to the FAGOR Linear Encoder Systems.

First we will show the parameters related to the models of CNC 8055i, 8040 and 8035; in the following issue we will do with the parameters related to the models of CNC 8055 and 8050; later with the models of CNC of the series 800 and, finally, with those of the series 101/102.

We believe that this information will be very useful in cases like:

- Repair/substitution of a linear encoder connected to a Fagor CNC.
- Substitution of a rotary encoder by a linear one connected to a Fagor CNC.
- Etc.

FAGOR CNC 8055i, 8040 & 8035: SHORT PARAMETERS DEFINITION

AXISTYPE

It defines if it is a rotary or linear axis

LIMIT+

Positive travel limit. By software

LIMIT-

Negative travel limit. By software

PITCH

Pitch of the feedback signal coming from the reader head

DIFFBACK

It defines if the feedback signals are differential.

SINMAGNI

Multiplying factor for sinewave signals

FBACKAL

Feedback alarm

BACKLASH

Ballscrew backlash. Only valid for linear axis with a rotary encoder

DECINPUT

It defines if there is switch to search the home reference.

REFPULSE

It defines if the I_o pulse is positive or negative

IOTYPE

It defines if the system uses incremental or coded reference mark scales.

ABSOFF

Distance when the I_o mark is not located in one extreme of the scale

REFVALUE

Offset between machine home and scale reference mark.

EXTMULT

External multiplying factors when coded reference marks are being used.

IOCODI1

Distance between 2 fixed reference marks. Only for coded scales.

IOCODI2

Distance between 2 variable reference marks. Only for coded scales.



GROUP	SCALE MODELS
1	SX, SVX, GX, MX, MVX, MKX, CX, CVX
2	SP, SVP, GP, MP, MVP, CP, CVP
3	MVS, CVS
4	LP
5	LX
6	FP
7	FS
8	FX
9	CT, MT, MKT
10	FT
11	SOX, SOVX, GOX, MOX, MOVX, COX, COVX
12	SOP, SOVP, GOP, MOP, MOV, COP, COVP
13	MOVS, COVS
14	LOP
15	LOX
16	FOP
17	FOS
18	FOX
19	COT, MOT
20	FOT

*****NOTE:UNITS ARE IN MM*****

NO CODED SCALES CONNECTED TO FAGOR CNC 8055i, 8040 & 8035

PARAMETER	GROUP 1	GROUP 2	GROUP 3	GROUP 4	GROUP 5	GROUP 6	GROUP 7	GROUP 8	GROUP 9	GROUP 10
LIMIT+ (P5)	Depends on the measuring length									
LIMIT- (P6)	Depends on the measuring length									
PITCH (P7)	0.004	0.02	0.02	0.04	0.004	0.1	0.1	0.004	0.02	0.02
NPULSES (P8)	0									
DIFFBACK (P9)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
SINMAGNI (P10)	0	20	20	40	0	100	100	0	0	0
FBACKAL (P11)	ON									
BACKLASH (P14)	0									
DECINPUT (P31)	YES (there is home search switch) / NO (There is no home search switch)									
REFPULSE (P32)	+	-	-	-	+	-	-	+	-	-
IOTYPE (P52)	0									
ABSOFF (P53)	0									
REFVALUE (P36)	To define by the end user									
EXTMULT (P57)	5	1	1	1	10	1	1	25	1	5
IOCODI1 (P68)	0									
IOCODI2 (P69)	0									

NOTE: The scales included in the groups 3 & 7 need to be install with the signal adapter SA – FS – P which transform the signals from 3Vpp to 1Vpp amplitude.

In the CNC, connectors X1, X2, X3 & X4 can be connected both sinewave signals and TTL square wave.
In the CNC, connectors X5, X6, X7 & X8 only TTL square wave can be connected. See groups of scales.

NOTE (for models 8055i & 8040): These parameters are covered for the CNC system when the parameters DRIBUSID (P56) = 0 or when SERCOID (P56) is not 0 (the CNC is installed with SERCOS) but the parameter DRIBUSLE (P63) = 0. When DRIBUSLE (P63) = 1 or 2, the scale parameters need to be set via the servo drive.

DRIBUSID & DRIBUSLE are the name in the current software versions. The previous names were SERCOSID & SERCOSLE respectively.

*******NOTE:UNITS ARE IN MM*******

CODED SCALES CONNECTED TO FAGOR CNC 8055i, 8040 & 8035

PARAMETER	GROUP 11	GROUP 12	GROUP 13	GROUP 14	GROUP 15	GROUP 16	GROUP 17	GROUP 18	GROUP 19	GROUP 20
LIMIT+ (P5)	Depends on the measuring length									
LIMIT- (P6)	Depends on the measuring length									
PITCH (P7)	0.004	0.02	0.02	0.04	0.004	0.1	0.1	0.004	0.02	0.1
NPULSES (P8)	0									
DIFFBACK (P9)	YES	YES	YES	YES	YES	YES	YES	YES	NO	NO
SINMAGNI (P10)	0	20	20	40	0	100	100	0	0	0
FBACKAL (P11)	ON									
BACKLASH (P14)	0									
DECINPUT (P31)	YES (there is home search switch) NO (There is no home search switch)									
REFPULSE (P32)	+	-	-	-	+	-	-	+	-	-
IOTYPE (P52)	1 or 2 Depends on the increasing or decreasing direction of the reference marks									
ABSOFF (P53)	0									
REFVALUE (P36)	To define by the end user									
EXTMULT (P57)	5	1	1	1	10	1	1	25	1	5
IOCOD11 (P68)	1000		2000			1000				
IOCOD12 (P69)	1001		2001			1001				

NOTE: The scales included in the groups 13 & 17 need to be install with the signal adapter SA – FS – P which transform the signals from 3Vpp to 1Vpp amplitude.

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NOTE (for models 8055i & 8040): These parameters are covered for the CNC system when the parameters DRIBUSID (P56) = 0 or when SERCOID (P56) is not 0 (the CNC is installed with SERCOS) but the parameter DRIBUSLE (P63) = 0. When DRIBUSLE (P63) = 1 or 2, the scale parameters need to be set via the servo drive.

DRIBUSID & DRIBUSLE are the name in the current software versions. The previous names were SERCOSID & SERCOSLE respectively.