

Festo_Positioning_Basic library – System Visualisation

Festo_Positioning_Basic library – commissioning example using
a selected system

FPosB

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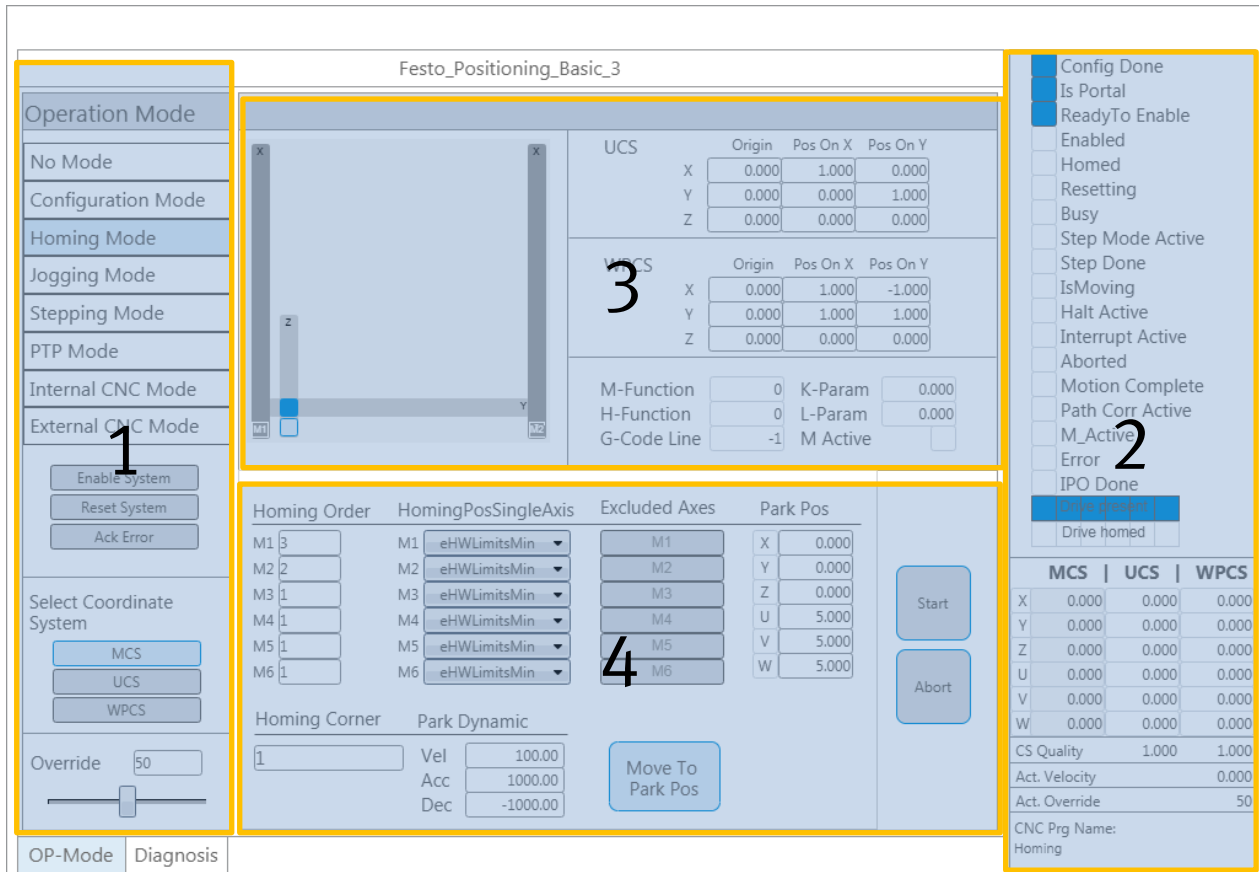
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1 Codesys visualisation

On the one hand, the visualisation is used to control the application and, on the other hand, to view the current status. It's above all useful for obtaining a basic understanding of the functions and testing them.

Roughly speaking, it can be subdivided into four areas (Homing Mode example):



1. Visualisation input area. This is subdivided into various modes and general control of the system (controller enable, system reset, acknowledge error, override, coordinate system).
2. Output range of the visualisation with display of the status word, the current positions in the coordinate systems and information regarding CNC.

Both ranges are continuously visible in all modes in the "OP-Mode" tab. The middle range adapts itself to the respective mode.

As of the homing mode, this area is split into an upper and a lower range.

3. The selected kinematics are visualised so that motion can also be simulated. The parameters of the coordinate systems and information regarding the G code of any utilised CNC are also displayed (M/H function, K/L parameters, current G code line).
4. The information and the control elements for the respective modes are displayed here.

1.1 No Mode

After restarting the controller, the visualisation appears as follows:

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override

100

Please change the operation mode on the left side

OP-Mode

Diagnosis

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive Present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity0.000

Act. Override100

Covered Distance0.000

CNC Prg Name:

No_CNC

No actions are possible here. An operating mode must be selected, and the configuration mode must always be selected once after a restart. This can also be selected as the default setting after a restart.

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1.2 Configuration Mode

All data can once again be viewed and changed via the KINEMATICS, DRIVES, DYNAMICS and HOMING tabs in the configuration mode, which were specified in GVL_Konfig.

Within SETTINGS you can login, manage the parameter files or change the password.

All of the settings are visible which were previously selected in GVL_Config.

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

V3.5.10.43

Settings

Kinematic

Drives

Dynamic

Homing

Login to Change Parameters

Login PW : *****

Login Logged in

Logout Login Failed

Save Load Parameter File

Save ParameterSavedToFile

Load ParameterLoadedFromFile

 NoParameterFileFound

 ParameterFileDeleted

Delete

Delete

Change Password

Change Password

OP-Mode

Diagnosis

Config Done			
Is Portal			
ReadyTo Enable			
Enabled			
Hommed			
Resetting			
Busy			
Step Mode Active			
Step Done			
IsMoving			
Halt Active			
Interrupt Active			
Aborted			
Motion Complete			
Path Corr Active			
M_Active			
Error			
IPO Done			
Drive present			
Drive homed			

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality	
Act. Velocity	0.000
Act. Override	100
Covered Distance	0.000

CNC Prg Name:
No_CNC

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Kinematic V3.5.10.43

Settings Kinematic Drives Dynamic Homing

Basic Advanced

HW/SW LIMITS

	HW Limit Min	SW Limit Min	SW Limit Max	HW Limit Max	
X	-10.000	-5.000	380.000	390.000	X
Y	-10.000	-5.000	330.000	350.000	Y
Z	-5.000	-3.000	130.000	140.000	Z
U	-1085.000	-1080.000	1080.000	1085.000	U
V	-5.000	-3.000	100.000	105.000	V
W	-5.000	-3.000	100.000	105.000	W

KINEMATIC_TYPE Belt Lock

eH_Gantry eH_MOTOR_SIDE

Use UVW Axes

UVW

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Kinematic V3.5.10.43

Settings Kinematic Drives Dynamic Homing

Basic Advanced

XY Traverse Compensation dPhi

0.00000 [°]

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Drives V3.5.10.43

Settings Kinematic **Drives** Dynamic Homing

Basic Advanced

Drives Available

	eMotorType	eOrientation
M1	eFestoEmcxST_EC	eBottom
M2	eFestoEmcxST_EC	eBottom
M3	eFestoEmcxST_EC	eBottom
M4	eFestoEmcxST_EC	eBottom
M5	eFestoEmcxST_EC	eBottom
M6	eFestoEmcxST_EC	eBottom

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Drives V3.5.10.43

Settings Kinematic **Drives** Dynamic Homing

Basic **Advanced**

Manual Brake Control

Enable Brake Control

	CLOSE	OPEN
M1		
M2		
M3		
M4		
M5		
M6		

Feedconstance (0=default)

	Feedconstance
M1	0.00000 [Unit/revolution]
M2	0.00000 [Unit/revolution]
M3	0.00000 [Unit/revolution]
M4	0.00000 [Unit/revolution]
M5	0.00000 [Unit/revolution]
M6	0.00000 [Unit/revolution]

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Dynamic V3.5.10.43

Settings Kinematic Drives **Dynamic** Homing

Basic Advanced

LimitAxes

	Vel	Acc/Dec
M1	X	500.00 1000.00
M2	Y	500.00 1000.00
M3	Z	500.00 1000.00
M4		500.00 1000.00
M5		500.00 1000.00
M6		500.00 1000.00

LimitAxisDyn

QuickStopJerk 1000000.00 [mm/s³]

QuickStopDec 10000.00 [mm/s³]

Vel Mode Interpolator QUADRATIC

MaxJerk 100000.00 [mm/s³]

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Dynamic V3.5.10.43

Settings Kinematic Drives **Dynamic** Homing

Basic **Advanced**

Max Dynamic (0 = Default value from device)

	Vel	Acc	Dec	Jerk
M1	0.00	0.00	0.00	0.00
M2	0.00	0.00	0.00	0.00
M3	0.00	0.00	0.00	0.00
M4	0.00	0.00	0.00	0.00
M5	0.00	0.00	0.00	0.00
M6	0.00	0.00	0.00	0.00

PathAngleTolerance

0.10 [°]

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

OP-Mode Diagnosis

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Homing V3.5.10.43

Settings Kinematic Drives Dynamic **Homing**

Basic Advanced

Exclude Axis

M1

M2

M3

M4

M5

M6

Homing Order

M1 4

M2 3

M3 2

M4 1

M5 1

M6 1

Move To Park Pos

Move To Park Pos

Park Dynamic

Vel 30.00

Acc 1000.00

Dec -1000.00

ParkPos

X 0.000

Y 0.000

Z 0.000

U 0.000

V 0.000

W 0.000

Homing Corner Set Homing Corner As Origin Already Homed

eCorner3 SetHomingCornerAsOrigin Already Homed

Homing Method (0=default) **Homing Pos** SingleAxis **User HomingPos**

Method	Pos	User HomingPos
-18 = eBlockPositive	M1 0	eHWLimitsMin 0.000
-17 = eBlockNegative	M2 0	eHWLimitsMin 0.000
17 = eLSNegative	M3 0	eHWLimitsMin 0.000
18 = eLSPositive	M4 0	eUserHomingPos 0.000
35 = eActPos	M5 0	eUserHomingPos 0.000
37 = eActPosCmnt	M6 0	eUserHomingPos 0.000
0 = eDefault		

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Homing V3.5.10.43

Settings Kinematic Drives Dynamic **Homing**

Basic Advanced

Save Encoder Offset **Homing Timeout** (default T#1m)

Enable save encoder offset T#1m

M1

M2

M3

M4

M5

M6

EMCX Sensor Config

Enable	M1	M2	M3	M4	M5	M6
Digital_In3						
Digital_In4						

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: No_CNC

1.3 Homing Mode

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

MCS

UCS

WPCS

Override

100

OP-Mode

Diagnosis

Festo_Positioning_Basic_3

X

Y

Z

M1

M2

UCS

Origin

Pos On X

Pos On Y

X

0.000

1.000

0.000

Y

0.000

0.000

1.000

Z

0.000

0.000

0.000

WPCS

Origin

Pos On X

Pos On Y

X

0.000

1.000

-1.000

Y

0.000

1.000

1.000

Z

0.000

0.000

0.000

M-Function

0

K-Param

0.000

H-Function

0

L-Param

0.000

G-Code Line

-1

M Active

Homing Order

HomingPosSingleAxis

Excluded Axes

Park Pos

M1

3

M1

eHWLimitsMin

M1

X

0.000

M2

2

M2

eHWLimitsMin

M2

Y

0.000

M3

1

M3

eHWLimitsMin

M3

Z

0.000

M4

1

M4

eHWLimitsMin

M4

U

0.000

M5

1

M5

eHWLimitsMin

M5

V

0.000

M6

1

M6

eHWLimitsMin

M6

W

0.000

Homing Corner

Park Dynamic

1

Vel

50.00

Acc

1000.00

Dec

-1000.00

Move To Park Pos

Start

Abort

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Circle segment

Drive homed

MCS

UCS

WPCS

X

0.000

0.000

0.000

Y

0.000

0.000

0.000

Z

0.000

0.000

0.000

U

0.000

0.000

0.000

V

0.000

0.000

0.000

W

0.000

0.000

0.000

CS Quality

1.000

1.000

Act. Velocity

0.000

Act. Override

100

CNC Prg Name:

Homing

All of the settings which directly affect homing can be seen in the homing mode (see also GVL_Config in 03 Configuration H-/T-/XY-Gantry).

Control elements are included at the right by means of which homing can be started (Start) or stopped (Abort).

The highlighted area on this page is for display purposes only. Changes must be made in the configuration mode.

1.4 Jogging Mode

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

UCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	0.000
Y	0.000	0.000	1.000
Z	0.000	0.000	0.000

WPCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	-1.000
Y	0.000	1.000	1.000
Z	0.000	0.000	0.000

G-Code Line -1 K-Param 0.000

M-Function 0 L-Param 0.000

H-Function 16#0 M Active

Jog/Step Dyn

Vel	10.00
Acc	1000.00
Dec	-1000.00

X+

Y-

X-

Y+

Z-

Z+

U-

V-

W-

U+

V+

W+

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive locked

OP-Mode

Diagnosis

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name:

Jogging

Dynamics values can be adjusted online. The kinematics are set into motion with the control elements.

1.5 Stepping Mode

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Festo_Positioning_Basic_3 EVO3

X

Z

Y

M1

M2

UCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	0.000
Y	0.000	0.000	1.000
Z	0.000	0.000	0.000

WPCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	-1.000
Y	0.000	1.000	1.000
Z	0.000	0.000	0.000

G-Code Line

-1

K-Param

0.000

M-Function

0

L-Param

0.000

H-Function

16#0

M Active

Jog/Step Dyn

Vel 10.00

Acc 1000.00

Dec -1000.00

Step width 5.000 [mm]

X+

X-

Y+

Y-

Z+

Z-

U+

U-

V+

V-

W+

W-

OP-Mode

Diagnosis

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive jump

MCS

ACS

SetPosACS

X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name:

Inching

Dynamics values can be adjusted online. Travel distance is set in the “Step width” entry field. This value must be entered as a figure, because travel direction is selected by means of the respective elements. When a key is activated, the kinematics advance by a distance amounting to this value in the corresponding direction.

1.6 PTP

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS ▼

Override 100

UCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	0.000
Y	0.000	0.000	1.000
Z	0.000	0.000	0.000

WPCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	-1.000
Y	0.000	1.000	1.000
Z	0.000	0.000	0.000

G-Code Line -1 K-Param 0.000

M-Function 0 L-Param 0.000

H-Function 16#0 M Active

PTP Dyn

Vel	300.00
Acc	10000.00
Dec	-10000.00

PTP Pos

X	100.000
Y	100.000
Z	20.000
U	0.000
V	0.000
W	0.000

Start

Halt

Quick Stop

Abort

Ack M Function

Ack All M Functions

Enable Step Mode

Next Step

EnablePathCorrection

NoAbortByEMCYErr

UpdateCncList

OP-Mode

Diagnosis

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity	0.000
Act. Override	100
Covered Distance	0.000

CNC Prg Name: PTP

☒ Config Done
☒ Is Portal
☒ ReadyTo Enable
☒ Enabled
☒ Homed
☐ Resetting
☐ Busy
☐ Step Mode Active
☐ Step Done
☐ IsMoving
☐ Halt Active
☐ Interrupt Active
☐ Aborted
☐ Motion Complete
☐ Path Corr Active
☐ M_Active
☐ Error
☐ IPO Done
☒ Drive present
☒ Drive jump

In this mode, travel to positions (PTP Pos) takes place using the selected dynamics (PTP Dyn).

The first three control elements are active in this mode. The travel task is started (Start), suspended (Halt) or stopped and thus aborted (Abort).

1.7 Internal CNC Mode

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

Festo_Positioning_Basic_3 EVO3

X

Z

Y

M1

M2

UCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	0.000
Y	0.000	0.000	1.000
Z	0.000	0.000	0.000

WPCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	-1.000
Y	0.000	1.000	1.000
Z	0.000	0.000	0.000

G-Code Line -1 K-Param 0.000

M-Function 0 L-Param 0.000

H-Function 16#0 M Active

Internal CNC No

3

FB_PICK_AND_PLACE_CYCLIC

Start

Halt

Quick Stop

Abort

Ack M Function

Ack All M Functions

Enable Step Mode

Next Step

EnablePathCorrection

NoAbortByEMCYErr

UpdateCncList

OP-Mode

Diagnosis

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive jump

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name: FB_PICK_AND_PLACE_CYCLIC

The internal Codesys CNCs are used in this mode.

The CNCs are selected via Select User CNC and controlled by means of the control elements.

1. Start, halt or abort CNC
2. Acknowledge an M function or permanently acknowledge all M functions (CNC does not stop at any M functions as a result).
3. Activate the step mode and work through the individual segments of a CNC one after the other.
4. Activate path correction.

1.8 External CNC Mode

Festo_Positioning_Basic_3 EVO3

Operation Mode

No Mode

Configuration Mode

Homing Mode

Jogging Mode

Stepping Mode

PTP Mode

Internal CNC Mode

External CNC Mode

Enable System

Reset System

Ack Error

Select Coordinate System

eMCS

Override 100

UCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	0.000
Y	0.000	0.000	1.000
Z	0.000	0.000	0.000

WPCS

	Origin	Pos On X	Pos On Y
X	0.000	1.000	-1.000
Y	0.000	1.000	1.000
Z	0.000	0.000	0.000

G-Code Line -1 K-Param 0.000

M-Function 0 L-Param 0.000

H-Function 16#0 M Active

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive jump

CNC File Path

/mnt/sdcard/_cnc/MY_CNC.cnc

Default Path for External CNCs

CECC-X-.. : '//ffx/codesys/_cnc/'

CPX-E-CEC-M1 : '//ffx/codesys/prj/_cnc/'

WinPLC : 'C:_cnc'

CPX-E-CEC-M1 (ftp):

'/mnt/ftp'

Start

Halt

Quick Stop

Abort

Ack M Function

Ack All M Functions

Enable Step Mode

Next Step

EnablePathCorrection

NoAbortByEMCYErr

UpdateCncList

OP-Mode

Diagnosis

	MCS	ACS	SetPosACS
X	0.000	0.000	0.000
Y	0.000	0.000	0.000
Z	0.000	0.000	0.000
U	0.000	0.000	0.000
V	0.000	0.000	0.000
W	0.000	0.000	0.000

CS Quality

Act. Velocity 0.000

Act. Override 100

Covered Distance 0.000

CNC Prg Name:

/mnt/sdcard/_cnc/MY_CNC.cnc

CNC files can be saved to the controller. The CNCs are loaded and started by entering a file path in this mode. Control of the CNC is analogous to Internal CNC Mode.

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1.9 Diagnosis

Festo_Positioning_Basic_3 EVO3

Message System

Hex View

Ack	MSG ID	MSG Table	(Text/Hex) Add01	(Hex) Add02	Dev	Sub System	Reaction	Cat	Timestamp
	ERR_SystemNotEnabled	0		0	0	0	0	3	DT#2021-04-13-15:36:33

Get Drive Error

Messages

MSG IDs

Table1

Table2

Table3

Table4

Table5

Table6

Reaction

Example

OP-Mode

Diagnosis

Config Done

Is Portal

ReadyTo Enable

Enabled

Homed

Resetting

Busy

Step Mode Active

Step Done

IsMoving

Halt Active

Interrupt Active

Aborted

Motion Complete

Path Corr Active

M_Active

Error

IPO Done

Drive present

Drive homed

MCS

ACS

SetPosACS

X

0.000

0.000

0.000

Y

0.000

0.000

0.000

Z

0.000

0.000

0.000

U

0.000

0.000

0.000

V

0.000

0.000

0.000

W

0.000

0.000

0.000

CS Quality

Act. Velocity

0.000

Act. Override

100

Covered Distance

0.000

CNC Prg Name:

Homing

In the event of an error, information is made available in the “Diagnosis” tab. This makes it possible to determine the cause of the error and to implement appropriate corrective measures.
For further details see ERROR Handling 11 Messagesystem/Errorhandling.

1.10 PICK_AND_PLACE

FB_PICK_AND_PLACE_CYCLIC :		fbPick_n_Place_EVO3		
xRepeat	xPrePick			
xGotoParkPos	xPick			
UpperPosZ : 10.000	xPrePlace			
lrRad : 20.000	xPlace			
PickTimer: 1000	iPickCounter:0			
PlaceTimer: 1000	iPlaceCounter:0			
xAlreadyPicked	udiCycle :0			
xAckPickOrPlace	CycleTime 0 [ms]			
xPickPosReady (Tab)	lrPickRatePerMin: 0.000			
xPlacePosReady (Tab)	Park	Pick	Place	
xTeachPickPos	X	10.000	30.000	110.000
xTeachParkPos	Y	10.000	30.000	50.000
xTeachPlacePos	Z	10.000	100.000	100.000
xTeachPlacePos	U	10.000	90.000	180.000
xPickPosReady(Toggle)	PrePosZoffs	0.000	0.000	
xPlacePosReady(Toggle)	PrePosZ VEL	0.000	0.000	
	Dynamic	XYZ	U/A	
	Vel	100.00	100.00	
xContinuousPrePick	Acc	1000.00	1000.00	
xContinuousPrePlace	Dec	-1000.00	-1000.00	

This visualization can be used to control the function of the provided pick and place function block. You'll find detailed information in a separate application note "Pick and Place FB" and in the documentation