

Section 8.39

[Generic functions] - [Limit switches]

[Limit switches] L 5 L - Menu

Access

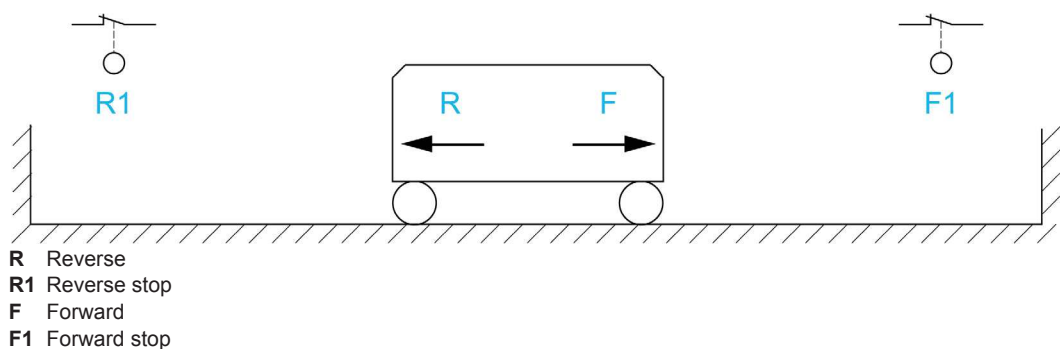
[Complete settings] → [Generic functions] → [Limit switches]

About This Menu

This function can be used to manage trajectory limits using limit switches

The stop mode is configurable. When the stop contact is activated, startup in the other direction is authorized.

Example:



The stop is activated when the input is at 0 (contact open).

[Stop FW assign] L F F

Stop forward limit assignment.

Setting	Code / Value	Description
[Not Assigned]	n a	Not assigned Factory setting
[CD00]...[CD10]	C d 0 0 ... C d 1 0	Virtual digital input CMD.0...CMD.10 in [I/O profile] , a configuration
[CD11]...[CD15]	C d 1 1 ... C d 1 5	Virtual digital input CMD.11...CMD.15 regardless of configuration
[C101]...[C110]	C 1 0 1 ... C 1 1 0	Virtual digital input CMD1.01...CMD1.10 with integrated Modbus Serial in [I/O profile] , a configuration
[C111]...[C115]	C 1 1 1 ... C 1 1 5	Virtual digital input CMD1.11...CMD1.15 with integrated Modbus Serial regardless of configuration
[C201]...[C210]	C 2 0 1 ... C 2 1 0	Virtual digital input CMD2.01...CMD2.10 with CANopen® fieldbus module in [I/O profile] , a configuration
[C211]...[C215]	C 2 1 1 ... C 2 1 5	Virtual digital input CMD2.11...CMD2.15 with CANopen® fieldbus module regardless of configuration
[C301]...[C310]	C 3 0 1 ... C 3 1 0	Virtual digital input CMD3.01...CMD3.10 with a fieldbus module in [I/O profile] , a configuration
[C311]...[C315]	C 3 1 1 ... C 3 1 5	Virtual digital input CMD3.11...CMD3.15 with a fieldbus module regardless of configuration
[C501]...[C510]	C 5 0 1 ... C 5 1 0	Virtual digital input CMD5.01...CMD5.10 with integrated Ethernet in [I/O profile] , a configuration
[C511]...[C515]	C 5 1 1 ... C 5 1 5	Virtual digital input CMD5.11...CMD5.15 with integrated Ethernet regardless of configuration
[DI1 (Low level)]...[DI8 (Low level)]	L 1 L ... L 8 L	Digital input DI1...DI8 used at low level
[DI11 (Low level)]...[DI16 (Low level)]	L 1 1 L ... L 1 6 L	Digital input DI11...DI16 used at low level if VW3A3203 I/O extension module has been inserted

[Stop RV assign] L F r

Stop reverse limit assignment.

Identical to **[Stop FW assign] L F F**.

[Stop type] L F 5

Stop type on limit switch.

The parameter can be accessed if **[Stop FW assign] L F F** or **[Stop RV assign] L F r** is assigned.

When the assigned input changes to 0, the stop is controlled in accordance with the selected type. Restarting is only authorized for the other operating direction once the motor has stopped. If the two inputs **[Stop FW assign] L F F** and **[Stop RV assign] L F r** are assigned and at state 0, restarting will be impossible. The parameter can be accessed if **[Stop FW assign] L F F** or **[Stop RV assign] L F r** is assigned.

Setting	Code / Value	Description
[On Ramp]	r P P	Stop on ramp
[Fast stop]	F 5 t	Fast stop
[Freewheel Stop]	n 5 t	Freewheel stop Factory setting

Section 8.40

[Generic functions] - [Positioning by sensors]

[Positioning by sensors]

Access

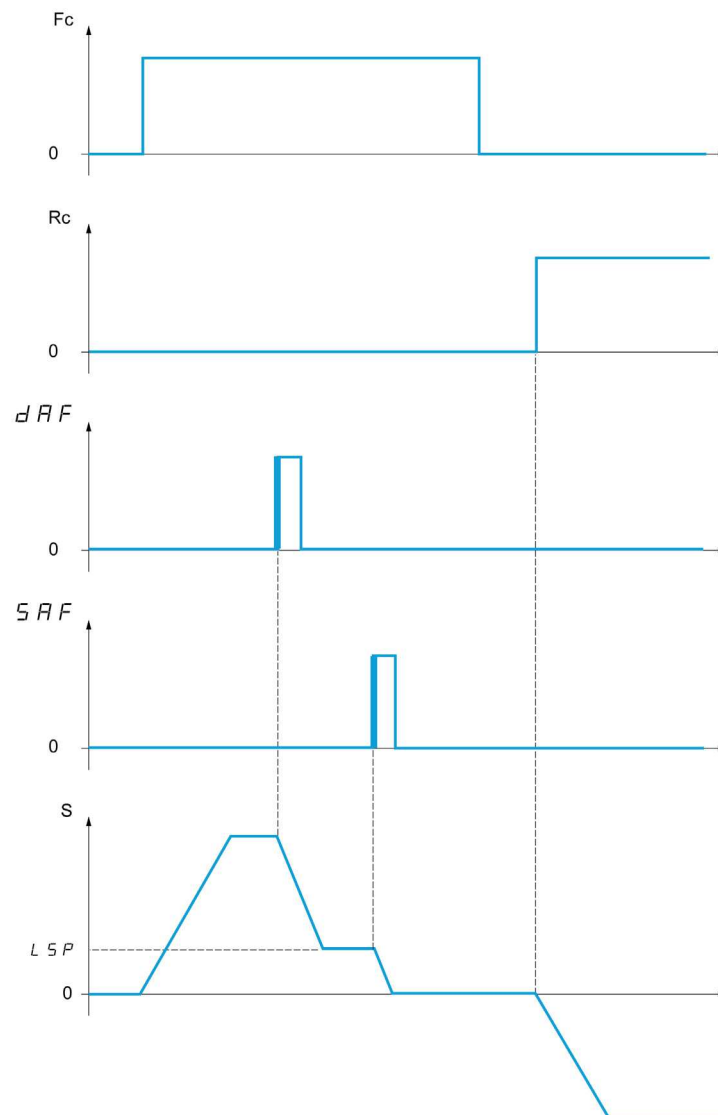
[Complete settings] → [Generic functions] → [Positioning by sensors]

About This Menu

This function is used for managing positioning using position sensors or limit switches linked to logic inputs or using control word bits:

- Slowing down
- Stopping

The action logic for the inputs and bits can be configured on a rising edge (change from 0 to 1) or a falling edge (change from 1 to 0). The example below has been configured on a rising edge:



Fc Forward run command
Rc Reverse run command
S Speed

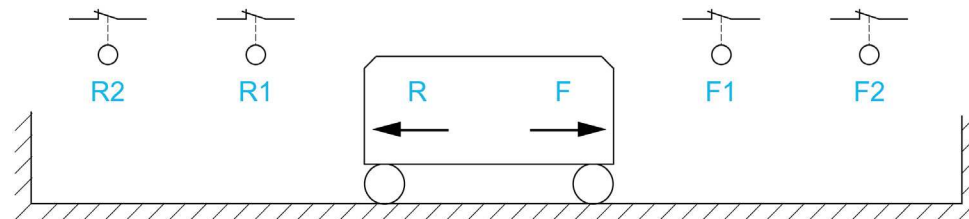
The slowdown mode and stop mode can be configured.

The operation is identical for both directions of operation. Slowdown and stopping operate according to the same logic, described below.

Example: Forward slowdown, on rising edge

- Forward slowdown takes place on a rising edge (change from 0 to 1) of the input or bit assigned to forward slowdown if this rising edge occurs in forward operation. The slowdown command is then memorized, even in the event of a power outage. Operation in the opposite direction is authorized at high speed. The slowdown command is deleted on a falling edge (change from 1 to 0) of the input or bit assigned to forward slowdown if this falling edge occurs in reverse operation.
- A bit or a logic input can be assigned to disable this function.
- Although forward slowdown is disabled while the disable input or bit is at 1, sensor changes continue to be monitored and saved.

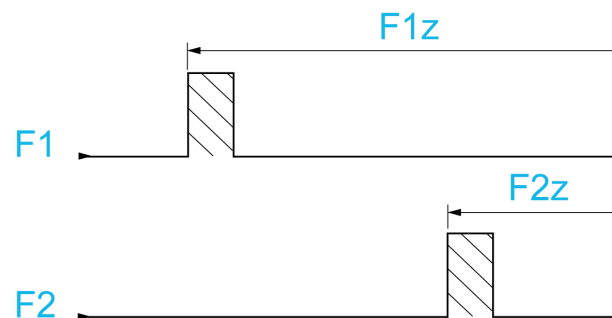
Example: Positioning on a limit switch, on rising edge



- R** Reverse
R1 Reverse slowdown
R2 Reverse stop
F Forward
F1 Forward slowdown
F2 Forward stop

Operation with short cams:

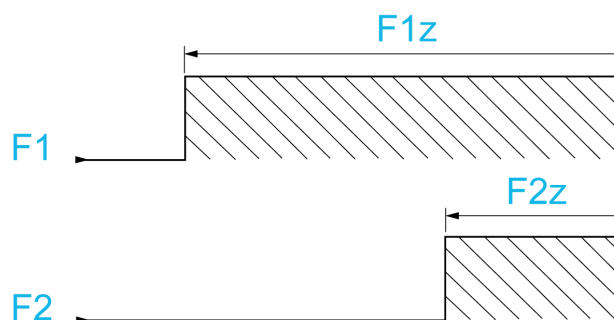
In this instance, when operating for the first time or after restoring the factory settings, the drive must initially be started outside the slowdown and stop zones in order to initialize the function.



- F1** Forward slowdown
F1z Forward slowdown zone
F2 Forward stop
F2z Forward stop zone

Operation with long cams:

In this instance, there is no restriction, which means that the function is initialized across the whole trajectory.



F1 Forward slowdown

F1z Forward slowdown zone

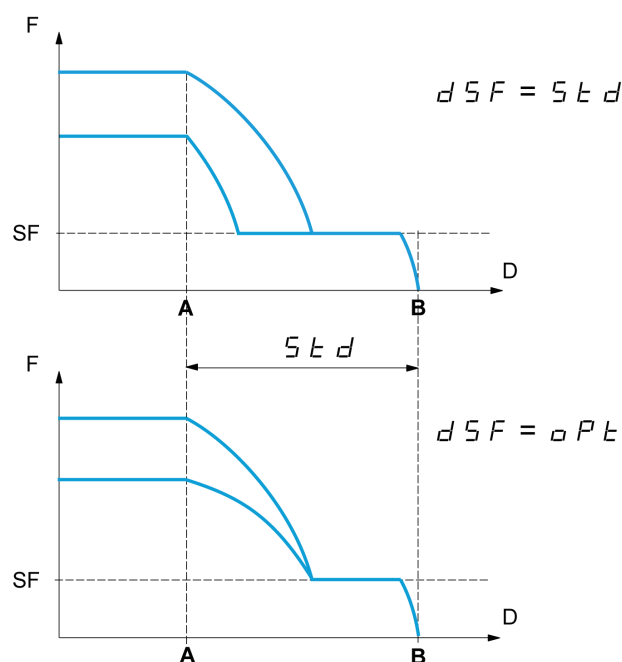
F2 Forward stop

F2z Forward stop zone

Stop at distance calculated after deceleration limit switch

This function can be used to control the stopping of the moving part automatically once a preset distance has been traveled after the slowdown limit switch. On the basis of the rated linear speed and the speed estimated by the drive when the slowdown limit switch is tripped, the drive will induce the stop at the configured distance. This function is useful in applications where one manual-reset overtravel limit switch is common to both directions. It will then only respond to help management if the distance is exceeded. The stop limit switch retains priority in respect of the function.

The **[Deceleration type] d S F** parameter can be configured to obtain either of the functions described below:



A Slowdown limit switch reached

B Automatic stop at a distance

D Distance

F Frequency

SF Slowdown frequency

Note:

- If the deceleration ramp is modified while stopping at a distance is in progress, this distance will not be observed.
- If the direction is modified while stopping at a distance is in progress, this distance will not be observed.

[Stop FW limit sw.] 5 FF

Stop switch forward.

Setting	Code / Value	Description
[Not Assigned]	n a	Not assigned Factory setting
[DI1]...[DI8]	L 1 L 8	Digital input DI1...DI8
[DI11]...[DI16]	L 11 L 16	Digital input DI11...DI16 if VW3A3203 I/O extension module has been inserted
[CD00]...[CD10]	C d 0 0 ... C d 1 0	Virtual digital input CMD.0...CMD.10 in [I/O profile] configuration
[CD11]...[CD15]	C d 1 1 ... C d 1 5	Virtual digital input CMD.11...CMD.15 regardless of configuration
[C101]...[C110]	C 1 0 1 ... C 1 1 0	Virtual digital input CMD1.01...CMD1.10 with integrated Modbus Serial in [I/O profile] configuration
[C111]...[C115]	C 1 1 1 ... C 1 1 5	Virtual digital input CMD1.11...CMD1.15 with integrated Modbus Serial regardless of configuration
[C201]...[C210]	C 2 0 1 ... C 2 1 0	Virtual digital input CMD2.01...CMD2.10 with CANopen® fieldbus module in [I/O profile] configuration
[C211]...[C215]	C 2 1 1 ... C 2 1 5	Virtual digital input CMD2.11...CMD2.15 with CANopen® fieldbus module regardless of configuration
[C301]...[C310]	C 3 0 1 ... C 3 1 0	Virtual digital input CMD3.01...CMD3.10 with a fieldbus module in [I/O profile] configuration
[C311]...[C315]	C 3 1 1 ... C 3 1 5	Virtual digital input CMD3.11...CMD3.15 with a fieldbus module regardless of configuration
[C501]...[C510]	C 5 0 1 ... C 5 1 0	Virtual digital input CMD5.01...CMD5.10 with integrated Ethernet in [I/O profile] configuration
[C511]...[C515]	C 5 1 1 ... C 5 1 5	Virtual digital input CMD5.11...CMD5.15 with integrated Ethernet regardless of configuration
[DI1 (Low level)]...[DI8 (Low level)]	L 1 L 8	Digital input DI1...DI8 used at low level
[DI11 (Low level)]...[DI16 (Low level)]	L 11 L 16	Digital input DI11...DI16 used at low level if VW3A3203 I/O extension module has been inserted

[Stop RV limit sw.] 5 FR

Stop switch reverse.

Identical to **[Stop FW limit sw.] 5 FF**.**[Forward Slowdown] d FF**

Slowdown attained forward.

Identical to **[Stop FW limit sw.] 5 FF**.**[Reverse Slowdown] d FR**

Slowdown attained reverse.

Identical to **[Stop FW limit sw.] 5 FF**.

[Disable limit sw.] *CL5* ★

Limits switches clearing.

The action of the limit switches is disabled when the assigned bit or input is at 1. If, at this time, the drive is stopped or being slowed down by limit switches, it will restart up to its speed reference.

This parameter can be accessed if at least one limit switch or one sensor has been assigned.

Setting	Code / Value	Description
[Not Assigned]	<i>n a</i>	Not assigned Factory setting
[DI1]...[DI8]	<i>L , I ... L , B</i>	Digital input DI1...DI8
[DI11]...[DI16]	<i>L , I I ... L , I B</i>	Digital input DI11...DI16 if VW3A3203 I/O extension module has been inserted
[CD00]...[CD10]	<i>C d 0 0 ... C d 1 0</i>	Virtual digital input CMD.0...CMD.10 in [I/O profile] , <i>a</i> configuration
[CD11]...[CD15]	<i>C d 1 1 ... C d 1 5</i>	Virtual digital input CMD.11...CMD.15 regardless of configuration
[C101]...[C110]	<i>C 1 0 1 ... C 1 1 0</i>	Virtual digital input CMD1.01...CMD1.10 with integrated Modbus Serial in [I/O profile] , <i>a</i> configuration
[C111]...[C115]	<i>C 1 1 1 ... C 1 1 5</i>	Virtual digital input CMD1.11...CMD1.15 with integrated Modbus Serial regardless of configuration
[C201]...[C210]	<i>C 2 0 1 ... C 2 1 0</i>	Virtual digital input CMD2.01...CMD2.10 with CANopen® fieldbus module in [I/O profile] , <i>a</i> configuration
[C211]...[C215]	<i>C 2 1 1 ... C 2 1 5</i>	Virtual digital input CMD2.11...CMD2.15 with CANopen® fieldbus module regardless of configuration
[C301]...[C310]	<i>C 3 0 1 ... C 3 1 0</i>	Virtual digital input CMD3.01...CMD3.10 with a fieldbus module in [I/O profile] , <i>a</i> configuration
[C311]...[C315]	<i>C 3 1 1 ... C 3 1 5</i>	Virtual digital input CMD3.11...CMD3.15 with a fieldbus module regardless of configuration
[C501]...[C510]	<i>C 5 0 1 ... C 5 1 0</i>	Virtual digital input CMD5.01...CMD5.10 with integrated Ethernet in [I/O profile] , <i>a</i> configuration
[C511]...[C515]	<i>C 5 1 1 ... C 5 1 5</i>	Virtual digital input CMD5.11...CMD5.15 with integrated Ethernet regardless of configuration
[DI1 (Low level)]...[DI8 (Low level)]	<i>L I L ... L B L</i>	Digital input DI1...DI8 used at low level
[DI11 (Low level)]...[DI16 (Low level)]	<i>L I I L ... L I B L</i>	Digital input DI11...DI16 used at low level if VW3A3203 I/O extension module has been inserted

[Stop type] *PA5* ★

Stop type on limit switch activation.

This parameter can be accessed if at least one limit switch or one sensor has been assigned.

Setting	Code / Value	Description
[On Ramp]	<i>r P P</i>	Follow ramp Factory setting
[Fast stop]	<i>F S t</i>	Fast stop (ramp time reduced by [Ramp Divider] <i>d C F</i>)
[Freewheel Stop]	<i>n S t</i>	Freewheel stop

[Deceleration type] d S F ★

Limit switch deceleration adaptation.

This parameter can be accessed if at least one limit switch or one sensor has been assigned.

Setting	Code / Value	Description
[Standard]	S E d	Uses the [Deceleration] d E C or [Deceleration 2] d E 2 ramp (depending on which has been enabled) Factory setting
[Optimized]	a P E	The ramp time is calculated on the basis of the actual speed when the slowdown contact switches, in order to limit the operating time at low speed (optimization of the cycle time: the slowdown time is constant regardless of the initial speed)

[Stop distance] S E d ★

Stop distance.

This parameter can be accessed if at least one limit switch or one sensor has been assigned. Activation and adjustment of the "Stop at distance calculated after the slowdown limit switch" function.

Setting	Code / Value	Description
[No]	n a	Function inactive Factory setting
[0.01...10.00]	0.0 1... 10.00	Stop distance range in meters

[Nom linear speed] n L S ★

Rated linear speed.

This parameter can be accessed if at least one limit switch or one sensor has been assigned and [Stop distance] S E d is not set to [No] n a.

Setting	Description
0.20...5.00 m/s	Factory setting: 1.00 m/s

[Stop corrector] S F d ★

Scaling factor applied to the stop distance to compensate, for example, a non-linear ramp.

This parameter can be accessed if at least one limit switch or one sensor has been assigned and [Stop distance] S E d is not set to [No] n a.

Setting	Description
50...200%	Factory setting: 100%

[Memo Stop] n S E P ★

Stop switch memorization.

This parameter can be accessed if at least one limit switch or one sensor has been assigned.

Setting	Code / Value	Description
[No]	n a	No memorization of limit switch
[Yes]	Y E S	Memorization of limit switch Factory setting

[Priority restart] P r S t ★

Priority given to the starting even if stop switch is activated.

This parameter can be accessed if at least one limit switch or one sensor has been assigned.

Setting	Code / Value	Description
[No]	n o	No restart priority if stop switch is activated Factory setting
[Yes]	y e s	Priority to restart even if stop switch is activated