

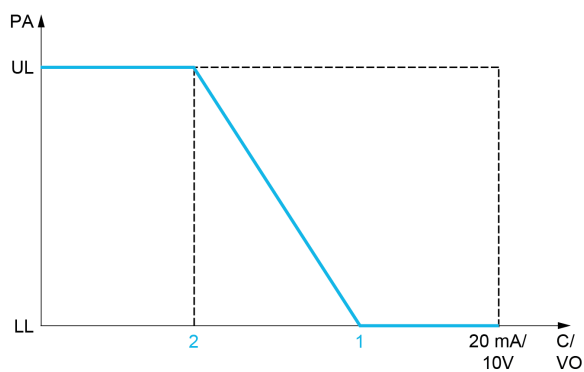
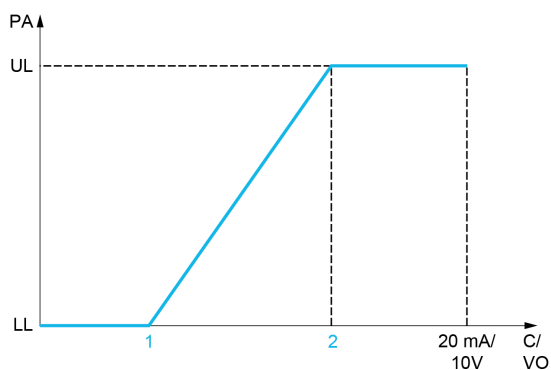
[AQ1 configuration] $R_{\square} I$ - Menu

Access

[Complete settings] → [Input/Output] → [AI/AQ] → [AQ1 configuration]

Minimum and Maximum Output Values

The minimum output value, in volts, corresponds to the lower limit of the assigned parameter and the maximum value corresponds to its upper limit. The minimum value may be greater than the maximum value.



PA Parameter assigned

C / VO Current or voltage output

UL Upper limit

LL Lower limit

1 [Min Output] $R_{\square} L X$ or $U_{\square} L X$

2 [Max Output] $R_{\square} H X$ or $U_{\square} H X$

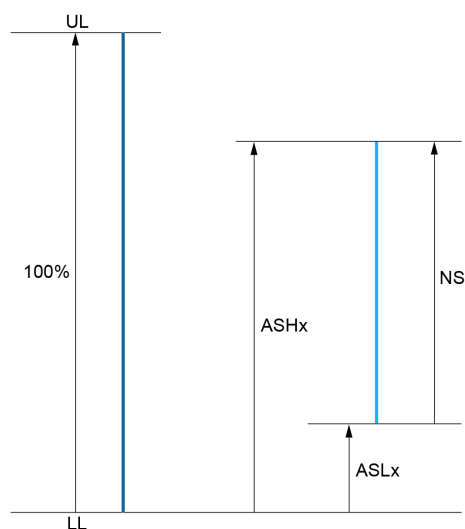
Scaling of the Assigned Parameter

The scale of the assigned parameter can be adapted in accordance with the requirements by modifying the values of the lower and upper limits with two parameters for each analog output.

These parameters are given in %. 100% corresponds to the total variation range of the configured parameter, so: $100\% = \text{upper limit} - \text{lower limit}$.

For example, **[Sign. torque] 5 L 9** which varies between -3 and $+3$ times the rated torque, 100% corresponds to 6 times the rated torque.

- The **[Scaling AQx min] 5 L X** parameter modifies the lower limit: new value = lower limit + (range x **5 L X**). The value 0% (factory setting) does not modify the lower limit.
- The **[Scaling AQx max] 5 H X** parameter modifies the upper limit: new value = lower limit + (range x **5 H X**). The value 100% (factory setting) does not modify the upper limit.
- **[Scaling AQx min] 5 L X** must always be lower than **[Scaling AQx max] 5 H X**.



UL Upper limit of the assigned parameter

LL Lower limit of the assigned parameter

NS New scale

1 5 H X

2 5 L X

Application Example

The value of the motor current at the AQ1 output is to be transferred with 0...20 mA, range 2 in motor, In motor being the equivalent of a 0.8 In drive.

- The **[Motor Current] 0 L r** parameter varies from 0 to 2 times the rated drive current, or a range of 2.5 times the rated drive current.
- **[Scaling AQ1 min] 5 L 1** must not modify the lower limit, which therefore remains at its factory setting of 0%.
- **[Scaling AQ1 max] 5 H 1** must modify the upper limit by 0.5x the rated motor torque, or $100 - 100/5 = 80\%$ (new value = lower limit + (range x **[Scaling AQ1 max] 5 H 1**)).

[AQ1 Assignment] $R_{\alpha I}$

AQ1 assignment.

Setting	Code / Value	Description
[Not Configured]	n_{α}	Not assigned
[Motor Current]	$\alpha L r$	Current in the motor, from 0 to 2 In (In = rated drive current indicated in the Installation manual and on the drive nameplate)
[Motor Frequency]	$\alpha F r$	Output frequency, from 0 to [Max Frequency] $L F r$ Factory Setting
[Ramp out.]	$\alpha r P$	From 0 to [Max Frequency] $L F r$
[Motor torq.]	$L r q$	Motor torque, from 0 to 3 times the rated motor torque
[Sign. torque]	$S L q$	Signed motor torque, between -3 and +3 times the rated motor torque. The + sign corresponds to the motor mode and the - sign to the generator mode (braking).
[sign ramp]	$\alpha r S$	Signed ramp output, between -[Max Frequency] $L F r$ and +[Max Frequency] $L F r$
[PID ref.]	$\alpha P S$	PID controller reference between [Min PID reference] $P, P I$ and [Max PID reference] $P, P 2$
[PID feedbk]	$\alpha P F$	PID controller feedback between [Min PID feedback] $P, F I$ and [Max PID feedback] $P, F 2$
[PID error]	$\alpha P E$	PID controller detected error between -5% and +5% of [Max PID feedback] $P, F 2$ - [Min PID feedback] $P, F I$
[PID output]	$\alpha P i$	PID controller output between [Low speed] $L S P$ and [High speed] $H S P$
[Drive power]	$\alpha P r$	Motor power, between 0 and 2.5 times [Nominal Motor Power] $n P r$
[Mot thermal]	$L H r$	Motor thermal state, from 0 to 200% of the rated thermal state
[Drv thermal]	$L H d$	Drive thermal state, from 0 to 200% of the rated thermal state
[Sig. o/p frq.]	$\alpha F S$	Signed output frequency, between -[Max Frequency] $L F r$ and +[Max Frequency] $L F r$
[Motor volt.]	$u_{\alpha P}$	Voltage applied to the motor, between 0 and [Nom Motor Voltage] $u n S$
[Inlet Pressure Value]	$P S I u$	Inlet pressure value
[Outlet Pressure Value]	$P S 2 u$	Outlet pressure value
[Installation Flow]	$F S I u$	Installation flow value
[Pump Flow]	$F S 2 u$	Pump flow value

[AQ1 Type] $R_{\alpha I L}$

AQ1 type.

Setting	Code / Value	Description
[Voltage]	$I D u$	0-10 Vdc
[Current]	$D R$	0-20 mA Factory setting

[AQ1 min output] $R_{\alpha L I} \star$

AQ1 current scaling parameter of 0%.

This parameter can be accessed if [AQ1 Type] $R_{\alpha I L}$ is set to [Current] $D R$.

Setting	Description
0.0...20.0 mA	Setting range Factory setting: 0.0 mA

[AQ1 max output] R_{OH} ★

AQ1 current scaling parameter of 100%.

This parameter can be accessed if [AQ1 Type] R_{IL} is set to [Current] IR .

Setting	Description
0.0...20.0 mA	Setting range Factory setting: 20.0 mA

[AQ1 min Output] U_{OL} ★

AQ1 voltage scaling parameter of 0%.

This parameter can be accessed if [AQ1 Type] R_{IL} is set to [Voltage] IDU .

Setting	Description
0.0...10.0 Vdc	Setting range Factory setting: 0.0 Vdc

[AQ1 max Output] U_{OH} ★

AQ1 voltage scaling parameter of 100%.

This parameter can be accessed if [AQ1 Type] R_{IL} is set to [Voltage] IDU .

Setting	Description
0.0...10.0 Vdc	Setting range Factory setting: 10.0 Vdc

[Scaling AQ1 min] R_{SL} I

AQ1 scaling parameter of 0%.

Scaling of the lower limit of the assigned parameter, as a % of the maximum possible variation.

Setting	Description
0.0...100.0%	Setting range Factory setting: 0.0%

[Scaling AQ1 max] R_{SH} I

AQ1 scaling parameter of 100%.

Scaling of the upper limit of the assigned parameter, as a % of the maximum possible variation.

Setting	Description
0.0...100.0%	Setting range Factory setting: 100.0%

[AQ1 Filter] R_{IF}

AQ1 cutoff time of the low-filter.

Setting	Description
0.00...10.00 s	Setting range Factory setting: 0.00 s

[AQ2 configuration] *AQ2* - Menu

Access

[Complete settings] → [Input/Output] → [AI/AQ] → [AQ2 configuration]

[AQ2 assignment] *AQ2*

AQ2 assignment.

Setting	Code / Value	Description
[Not Configured]	<i>n a</i>	Not assigned
[Motor Current]	<i>a C r</i>	Current in the motor, from 0 to 2 In (In = rated drive current indicated in the Installation manual and on the drive nameplate) Factory Setting
[Motor Frequency]	<i>a F r</i>	Output frequency, from 0 to [Max Frequency] <i>t F r</i>
[Ramp out.]	<i>a r P</i>	From 0 to [Max Frequency] <i>t F r</i>
[Motor torq.]	<i>t r q</i>	Motor torque, from 0 to 3 times the rated motor torque
[Sign. torque]	<i>S t q</i>	Signed motor torque, between -3 and +3 times the rated motor torque. The + sign corresponds to the motor mode and the - sign to the generator mode (braking).
[sign ramp]	<i>a r S</i>	Signed ramp output, between -[Max Frequency] <i>t F r</i> and +[Max Frequency] <i>t F r</i>
[PID ref.]	<i>a P S</i>	PID controller reference between [Min PID reference] <i>P , P l</i> and [Max PID reference] <i>P , P 2</i>
[PID feedbk]	<i>a P F</i>	PID controller feedback between [Min PID feedback] <i>P , F l</i> and [Max PID feedback] <i>P , F 2</i>
[PID error]	<i>a P E</i>	PID controller detected error between -5% and +5% of [Max PID feedback] <i>P , F 2</i> - [Min PID feedback] <i>P , F l</i>
[PID output]	<i>a P i</i>	PID controller output between [Low speed] <i>L S P</i> and [High speed] <i>H S P</i>
[Drive power]	<i>a P r</i>	Motor power, between 0 and 2.5 times [Nominal Motor Power] <i>n P r</i>
[Mot thermal]	<i>t H r</i>	Motor thermal state, from 0 to 200% of the rated thermal state
[Drv thermal]	<i>t H d</i>	Drive thermal state, from 0 to 200% of the rated thermal state
[Sig. o/p frq.]	<i>a F S</i>	Signed output frequency, between -[Max Frequency] <i>t F r</i> and +[Max Frequency] <i>t F r</i>
[Motor volt.]	<i>u a P</i>	Voltage applied to the motor, between 0 and [Nom Motor Voltage] <i>u n S</i>
[Inlet Pressure Value]	<i>P S l u</i>	Inlet pressure value
[Outlet Pressure Value]	<i>P S 2 u</i>	Outlet pressure value
[Installation Flow]	<i>F S l u</i>	Installation flow value

[AQ2 Type] *AQ2t*

AQ2 type.

Setting	Code / Value	Description
[Voltage]	<i>I D u</i>	0-10 Vdc
[Current]	<i>D R</i>	0-20 mA Factory setting

[AQ2 min output] *AQ2L* ★

AQ2 current scaling parameter of 0%.

This parameter can be accessed if [AQ2 Type] *AQ2t* is set to [Current] *D R*.Identical to [AQ1 min output] *AQ1L* (see page 514).

[AQ2 max output] R 0 H 2 ★

AQ2 current scaling parameter of 100%.

This parameter can be accessed if **[AQ2 Type] R 0 2 E** is set to **[Current] 0 R**.

Identical to **[AQ1 max output] R 0 H 1** (*see page 515*).

[AQ2 min Output] 0 0 L 2 ★

AQ2 voltage scaling parameter of 0%.

This parameter can be accessed if **[AQ2 Type] R 0 2 E** is set to **[Voltage] 1 0 0**.

Identical to **[AQ1 min Output] 0 0 L 1** (*see page 515*).

[AQ2 max Output] 0 0 H 2 ★

AQ2 voltage scaling parameter of 100%.

This parameter can be accessed if **[AQ2 Type] R 0 2 E** is set to **[Voltage] 1 0 0**.

Identical to **[AQ1 max Output] 0 0 H 1** (*see page 515*).

[Scaling AQ2 min] R 5 L 2

AQ2 scaling parameter of 0%.

Identical to **[Scaling AQ1 min] R 5 L 1** (*see page 515*).

[Scaling AQ2 max] R 5 H 2

AQ2 scaling parameter of 100%.

Identical to **[Scaling AQ1 max] R 5 H 1** (*see page 515*).

[AQ2 Filter] R 0 2 F

AQ2 cutoff time of the low-filter.

Identical to **[AQ1 Filter] R 0 1 F** (*see page 515*).