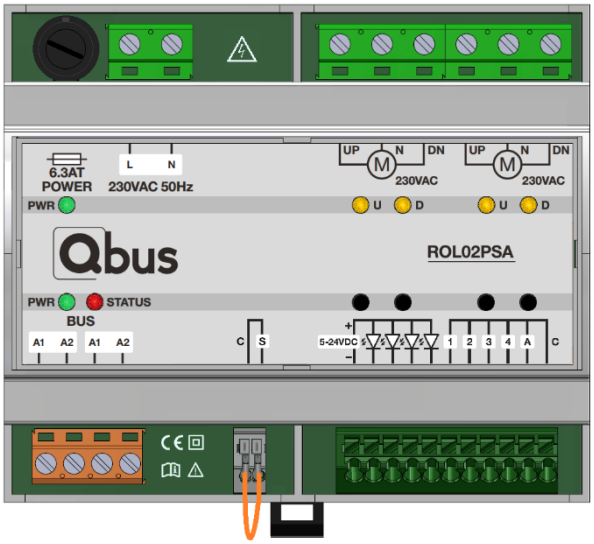
PRODUCT INFO

Technical Specifications

MOTOR CONTROL WITH POSITIONING FOR 2 MOTORS Stand-Alone (ROL02PSA)



ROL02PSA, Roller shutter module

1. Product description

Module for DIN-rail mounting, suitable for switching and positioning one to two motors of a roller shutter, curtain, sunshade, or blinds. This module is part of the Qbus Stand-Alone range and can operate independently, WITHOUT a Qbus Controller, or can also be temporarily or permanently connected to a Qbus controller for additional settings or to be part of a complete Qbus home automation system. When used with the ROL02PSA in combination with a CTD with internet connection, the control and visualization of the position can be displayed via Qbus Cloud, Qbus Control App, EQOmmand, and other compatible visualization software.

The module has 5 potential-free inputs for connecting standard push buttons (N.O.). Inputs 1 to 4 operate the UP and DOWN outputs. The A input functions with a pulse between 0.7 sec and 3 sec as a DOWN command. A long pulse > 3 sec on the A input functions as an UP command. By connecting the A inputs of different ROL01PSA, ROL02PSA, and/or ROL04PSA modules together, multiple motors on different modules can be controlled in groups.

The operation of input A can be adjusted when the ROL02PSA is connected to a Qbus CTD controller using the Qbus configuration software System Manager III. This allows you to set input delays, as well as a cascade time between 0 and 254 seconds.

You can also determine for each motor whether it can or cannot be controlled by an All UP and/or All DOWN command on the A input. The cascade control prevents a peak load when, for example, many motors are controlled simultaneously via input A. Once these settings have been programmed, the module can be disconnected and continue to work independently with these settings. There are also 4 connections where you can connect 5-24Vdc LED feedback for the display of the UP or DOWN request.

Furthermore, the ROL02PSA is equipped with a safety input S for normally closed contacts. A factory-installed jumper is inserted here so that the module is immediately functional without using the S function. When the jumper is removed or the normally closed circuit on the safety input S is interrupted, the SA push-button inputs are deactivated by default and the connected motors are forced to go to 100% UP position. Controls via the push-buttons and A-input are then no longer allowed. No additional configuration is required for this described function for Stand-Alone use. If necessary, when controlled via input S, the value per motor output can be changed from 100% to 0% via a CTD and System Manager III. A reset of the bistable output of the safety input is required when using it via CTD.

The safety input (S) can be used for various applications:

- Window contact in (sliding) window for automatic motor operation and to prevent unwanted operation.
- Connection with wind sensor for protection against wind damage.
- Window cleaner switch. To prevent accidents when cleaning windows.
- Connection to fire alarm system…
- A combination of multiple safety interlocks is also possible. In that case, the Normally Closed contacts should be connected in series

The ROL02PSA is equipped with power detection for automatic detection of run times of 230Vac motors with power between 40VA and 500VA. For motors that have electronic end stops or have lower power than 40VA, it may be necessary to manually set the run times. In Stand-Alone situations where no CTD is present in the installation, this can be done via the configuration mode that can be activated and the corresponding menu structure that is explained further in this document. In combination with a CTD (Qbus Controller), a deviating FIX time compared to the Stand-Alone menu choices can be set via System Manager III.

The ROL02PSA does not allow simultaneous control of an Up and a Down contact. It is also not possible to quickly switch between an Up command and a Down command. In this way, the module protects the motors against unwanted fast switching, which can damage or disrupt a motor.

Both one-button control for both Up and Down (except for louvers), and two-button control for a separate Up button and a separate Down button are possible. This can be set per motor output.

Blinds or louvers can be positioned in height and separately tilted between 0% and 100%. The tilt can be operated manually in an adjustable number, but up to a maximum of 10 steps.

Like any Qbus module, the ROL02PSA has a unique serial number that is entered when configuring it in the configuration software System Manager III. All programmed data is stored internally in permanent memory.

The operating modes of the ROL02PSA can be adjusted via the buttons on the module or by means of a temporary or permanent connection to a CTD via System Manager III.

Extra settings such as behavior when operated via A-input can be configured through a CTD and System Manager III. By default, each channel of the ROL02PSA is set to 2-button roller shutter mode without thermal glass break protection and without delay time on the cascade function. Because a bridge is provided on the S-input at the factory, the module is immediately functional.

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By means of configuration through the Stand-Alone menu structure or via System Manager III, the following operating modes are possible. If a CTD is connected, the Stand-Alone menu is no longer usable.

Operating in 2-button roller shutter mode (default):

- A short pulse on the UP button causes the module to drive the motor to 100%.
- A short pulse on the DOWN button causes the module to drive the motor to 0%.
- A short pulse while the motor is running, causes an immediate STOP.
- A long pulse (more than 300ms) causes the motor to move in the selected direction until the button is released.

Operating in 2-button roller shutter mode with thermal glass breakage protection:

- A short pulse on the UP button causes the module to send the motor to 100%.
- A short pulse on the DOWN button causes the module to send the motor to 0%.
- An intermediate position cannot be selected. The motor is only sent to 0% or 100%.
- In combination with a CTD, a long pulse (more than 300ms) will move the motor in the selected direction until the button is released. A position <50% will be forced to 0%, a position >=50% will be forced to 100%. Intermediate positions are not possible!
- When operated without a connected CTD, the duration of the pulse does not matter. The motor also does not stop in an intermediate position.
- This option ensures that the roller shutter or sunshade can only be fully open or fully closed, so that the temperature of the glass is kept constant everywhere and thermal glass breakage is avoided.
- This option is strongly recommended, for example, for large glass panels where the sun can shine directly upon. Also, due to the use of certain types of glass, this option is sometimes necessary. The window supplier should provide advice on this.

Operating in 1-button roller shutter mode:

- A short pulse on the UP button when the motor is stopped will make the motor move UP.
- A long pulse on the DOWN button will make the motor move DOWN.
- A short pulse on the button while the motor is moving in any direction, will cause an immediate STOP.

Operating in 1-button roller shutter mode with thermal glass breakage protection:

- A short pulse on the UP button when the motor is stationary, makes the motor go to 100% (UP).
- A long pulse on the button makes the motor go to 0% (DOWN).
- With this setting, you ensure that the roller shutter or sunshade can only be fully open or fully closed, so that the temperature of the glass is kept constant everywhere and thermal glass breakage is avoided.
- This option is strongly recommended, for example, for large glass panels where the sun can shine directly on. Also, due to the application of certain types of glass, this option is sometimes necessary. The window supplier should provide advice on this.

Operating with blinds (only with 2-button control):

- A very short pulse causes the motor with louvers to tilt one step. To go from the vertical to the horizontal position and further to the other vertical position, 10 steps are provided by default. The number of steps can only be set in System Manager III.
- A pulse of about 1 second causes the module to go to 0% or 100%. A short pulse in either direction stops the motor.
- A long pulse (more than 1s) causes the motor to move in the chosen direction until the button is released.

If the module is restarted after a power interruption, the outputs will stay in their last position.
Qbus is not responsible for any damage resulting from incorrect operation or incorrect settings in the roller shutter module.

2. Safety regulations

Read the full manual before installing and activating the module.

ATTENTION

- The module must be installed, started, and maintained by a certified electrician in accordance with the applicable legal regulations of the country.
- This module is only suitable for DIN rail installation EN50022. The module must be installed in a fireproof, enclosed distribution box with ventilation grilles.
- Before working on the ROL02PSA, the power must be turned off.
- Danger of injury! Ensure that no unwanted activation of the motors can occur during work.
- The module must not be opened. The warranty will be void if the module is opened!
- Do not use the module in an environment accessible to children.

3. Installation and cabling

CAUTION: DISCONNECT THE POWER SUPPLY TO THE MODULE BEFORE WORKING ON THE MODULE!

The ROL02PSA can be used in different ways. However, the following features remain the same for each cabling method:

Installation: snap the module onto a DIN rail DIN EN50022.

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Power supply: A two-pole automatic fuse with a maximum of C16A must be connected to the 230Vac module power supply. Conductor cross-section: minimum 1.5mm² at 16A. Remove approximately 7mm insulation from the conductor and screw the conductor into the L-N connector.

Load: The ROL02PSA is suitable for directly powering and controlling one to two 230Vac motors of up to 500VA each. Never connect more than one motor directly to the same output of the shutter module. Both solid and flexible wires can be used. Connect the load as shown in the figure on the next page. The conductor cross-section is a minimum of 1.5mm² with a protection of C16A. Remove approximately 7mm insulation from the conductors and screw the conductors into the UP, N, DN connectors. With flexible wire, end sleeves must be clamped onto the flexible wires before inserting them into the connection terminals. The screw of the connection terminal can be tightened with a screwdriver with a flat head of 0.5mm x 3mm.

Turn on the power only after all connections have been checked and the motor is connected. The motor to be connected must have preset end limit switches. A shutter module such as the ROL02PSA is not intended to set, replace, or take over physical end limits! End limit switches of the motors must be manually adjusted before connecting the motor to the module. We strongly recommend that the newly adjusted motors be operated several times via a test switch before connecting them to a motor controller. In some cases, the end limit control may not be set sustainably. Qbus is not responsible for any damage due to poor motor adjustment.

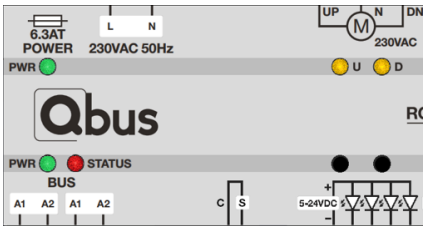
During the first operation after the module and motors are connected, the module will attempt to automatically detect the running times. If this is not possible, the module will interrupt the power to the motor after 5 seconds. In this case, the motor will only receive power for 5 seconds during the next operation. In some cases, calibration may partially work, but it is best to set a fixed time via the Stand-Alone menu or, if using CTD, set a FIX time via the System Manager. The Stand-Alone menu structure of the module provides for setting fixed running times. Auto-calibration may fail if the module has already been powered on and operated while the motor was not yet connected. In this case, a failed calibration can be reset via this menu structure.

When the running times are determined via automatic calibration, each time the motor is fully raised or lowered (i.e., every time an end limit switch is activated), the new running time will be stored in the internal memory. This ensures that the desired position of the shutter remains accurate over time. When a fixed running time has been set, no recalibration will take place.

LED indication on the module:

- **Green:** Power supply (top) OK / Bus OK (bottom)
- **Red:** Status LED lights up for 2 seconds during start-up and then during programming.

  This LED will also flash when the Stand-Alone module is placed in configuration mode. (see further Stand-Alone menu settings)
- **Orange:** Output (U, D); flashing = if not calibrated and during calibration.



Manual control: Used to directly operate the motors from the module. The buttons are positioned below the LED feedback of the U and D outputs for each motor output.

Stand-Alone menu settings: To change the configuration for Stand-Alone use (without a connected CTD!), certain settings can be made with the buttons of each motor output. Once the module is in configuration mode, you can make a choice for each motor in both the type of operating mode and runtime. To change the choice, repeat the procedure to enter configuration mode. There are two buttons provided for each motor output. You can use the 1st button (U/UP) to select the desired mode and set the runtimes using the 2nd button (D/DOWN).

To put the module into configuration mode, follow the following procedure each time:

1) Turn the outputs OFF (= the orange LEDs are off).

2) Simultaneously press button 1 and 2 and keep them pressed => The red STATUS LED will start blinking rapidly for 5 seconds. After those 5 seconds, the red STATUS LED on the module will start blinking at a slower pace.

   Once the red STATUS LED has blinked 2 times at this slower pace, release the 1st button and keep the 2nd button pressed. Let the red STATUS LED blink 2 more times before releasing the 2nd button.

3) The red STATUS LED will now keep blinking: the module is in configuration mode for 5 seconds or longer if changes are being made.

   Press the button the number of times that corresponds to the choice from the tables below.

4) The orange LED next to the button will light up each time it is pressed. The table below shows the number of times the button must be pressed to obtain a desired setting. The configuration mode will stop after 5 seconds without any further changes being made.

Button 1: Select Mode	Select / press x
2-button operation without thermal glass breakage protection	1x
2-Key operation with thermal glass breakage protection	2x
1-pushbutton control without thermal glass breakage protection	3x

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1-button operation with thermal glass breakage protection	4x
2-Key operation UP/DOWN without thermal glass breakage protection + positioning blinds	5x

Button 2: Select running time	**Select / press x**
Automatic calibration / restart calibration (automatic running time detection UP & DOWN)	1x
FIX running time 30sec	2x
FIX running time 60sec	3x
FIX running time 90sec	4x
FIX running time 120sec	5x
FIX running time 180sec	6x

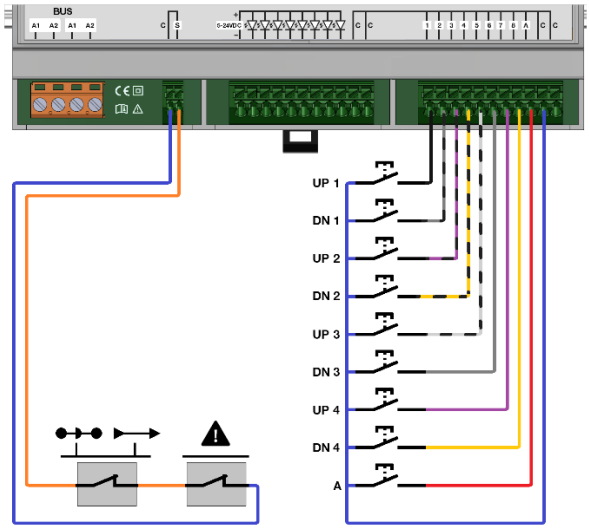
Operating modes:

Option 1: Stand-Alone:

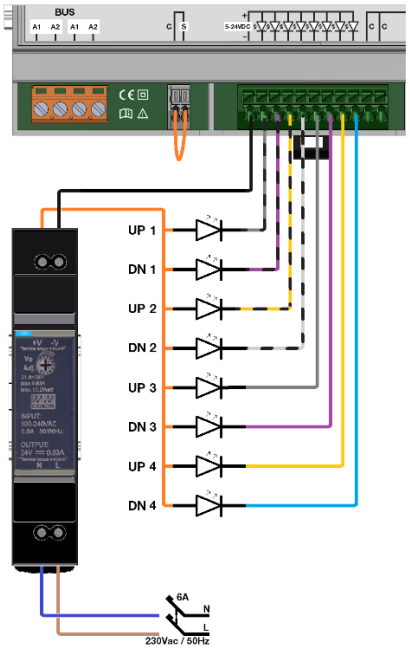
You can wire and use one or more modules Stand-Alone. There is no limit to the number of Stand-Alone modules that can be linked via the atmosphere input A and/or safety input S. Combinations with other types of Qbus Stand-Alone modules to link the mood input A ("All-OFF" / "Panic" button) are also unlimited. Keep the wiring between push buttons and SA modules separated from other cabling as much as possible or preferably use shielded cabling In normal circumstances, SVV cabling is sufficient for connecting push buttons.

The push buttons for control and motor safety contacts as well as the associated LED feedback, are connected directly to the module. These retain their function

SA- Inputs: Remove about 7mm of insulation from the cable and push the cable into terminals 1 to A. Both solid and flexible wire between 0.5 - 1, 5 mm2 can be used; for flexible wire, use a screwdriver to push on the terminal when pushing in the wire. By pushing on the top of the terminal with a screwdriver, the wires can be removed from the terminals. If you are not going to use safety contacts, you should leave the wire bridge in the safety input S.



LED feedback for Stand-Alone push buttons: An external 5-24Vdc power supply can be connected to the ROL02PSA to provide LED feedback for, for example, the directly connected push button(s).



Multiple Stand-Alone with interconnection of inputs S and/or A

If you want to connect several modules from the same Stand-Alone / star wiring or interconnect the S- or A-input, you must always interconnect the C (Common) between the modules! Failure to interconnect the C input between the different modules can cause

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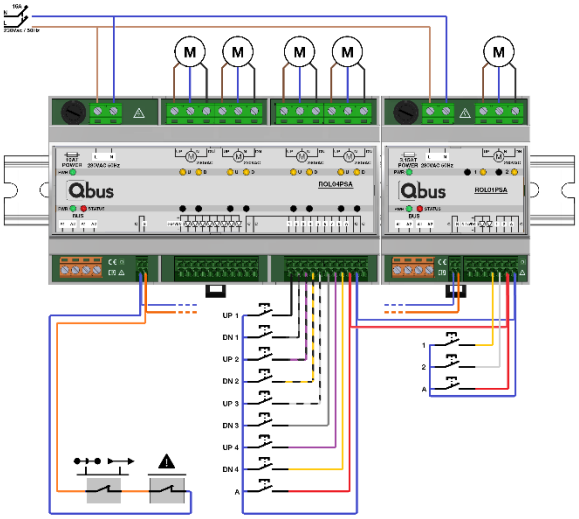
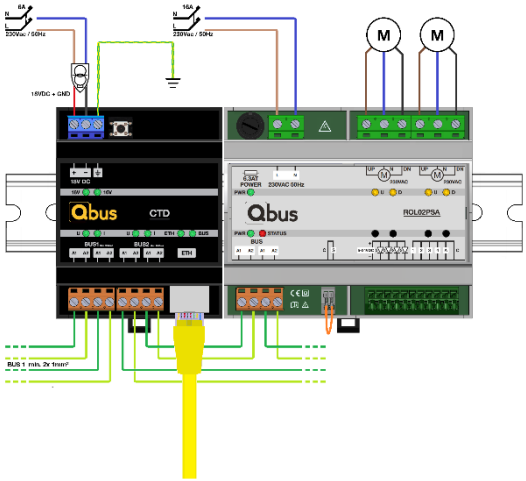
malfunctions.



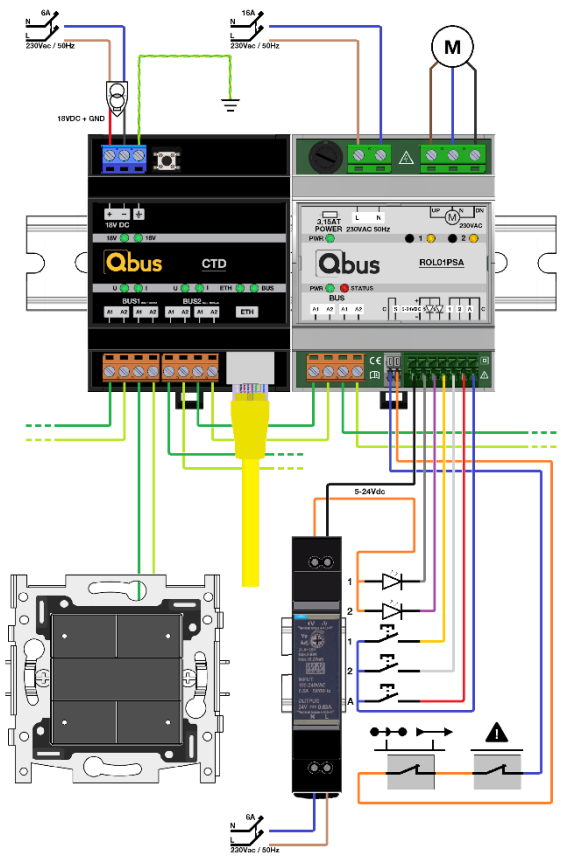
Wiring methods when using a Qbus Controller

Qbus-bus cabling:
Any shielded cable with conductors of at least 2 x 1 mm² can be used as a bus cable. The green shielded EIB cable is the recommended cable when the conductors are twisted together in pairs to obtain a section of at least 2 x 1 mm². The shielding of the bus cable must, and should only, be connected at one end to the general earthing of the building.

With controller without SA connections / fuses:



With controller, safety contacts, Stand-Alone connections and smart switch (example like ROL01PSA):



4. Technical Data

General specifications:

- Power supply: 230Vac +-10%, 50Hz - maximum protection C16A/2P
- Breakthrough voltage: tested at 3 kVac
- Typical consumption: max 29mA (all relay outputs on)
- Ambient temperature:
  - Operational temperature: 10°C to 50°C
  - Storage temperature: -10°C to 60°C
- Maximum humidity: 93%, no condensation
- Bus load: 8mA at rated voltage 13.8V.
- Maximum installation altitude: 2,000 metres above sea level.

Outputs:

- UP - DN: 230VAC output
- Maximum current: 500VA
- Contact resistance: 100m
- Set/Reset time: 15ms max / 5ms max
- Lifetime: 20mil. Operations
- Minimum load: 40VA on 230Vac
- Maximum load: 500VA on 230Vac

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Physical specifications:

- Housing: plastic, self-extinguishing in accordance with UL94-V0
- Protection rating: IP20, EN60529
- Installation: quick installation on DIN-RAIL, width 6 modules
- Dimensions (HxWxL): 62mm x 90mm x 107mm
- Weight: 0,272 kg

Elektrical protection

- Bus: 13.8Vdc -18Vdc very low safety voltage.
- In compliance with EN50491-5-1, EN50491-5-2, EN60529
- Breakthrough voltage: module tested and approved at 3kVac (50 Hz, 1 min)
- Non-toxic in compliance with WEEE/RoHS

CE

- Qbus declares that this product complies with all applicable European directives and regulations..
- The EU declaration of conformity is available on simple request.

5. Dimensioning diagram

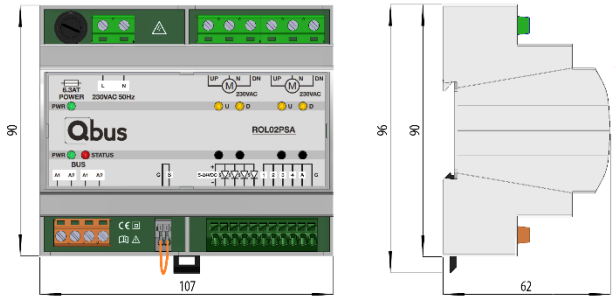

Figure 1 ROL02PSA Measurements

6. Explanation of symbols

Equipment where protection against the risk of electrical contact is based not only on basic insulation, but also on additional protection such as double insulation or reinforced insulation. There is no possibility of earthing.

Before connecting the device, it is mandatory to read the manual of the respective product. ISO7000-0434

Grid connection (230V) on power connector. IEC 60417-5036

CE conformity. All declarations of conformity are available on request.

7. Waranty conditions

Warranty period: 2 years from delivery date. The warranty no longer applies if the module has been opened! The warranty period is extended by 2 years if it was installed by an authorised Qbus installer. In case of defects, Qbus support should be contacted first. In case of defects, modules are sent to our service department unsealed:

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