PCD3.A860

digital light and shade module, with 2 make contacts Application

The module is a light and shade module with a manual control option. The desired functionality can be selected in the user program. There are two efficient make contacts (without suppressors) and 2 digital inputs. It is also possible to operate this module in "transparent mode". In this mode, the module is a pure I/O module with two inputs/outputs.

Technical data

Digital inputs	2
Digital outputs	2
Contact type:	make contact
Nominal voltage	12 A / 250 VAC each
Peak start-up current (20 ms)	80 A (AC)
Reverse voltage protection (U_{ext})	yes
Time constant of input filter	typically. 6 ms
Internal current consumption (from +5V bus)	max. 40 mA (both input LEDs on)
Internal current consumption (from V+ bus)	0 mA
External current consumption	max. 40 mA (both relay coils live, both output LEDs on)
Terminals	
Relay outputs	1× pluggable 4-pole cage clamp terminal block (4 405 5027 0), for wires up to 2.5 mm²
Sensor inputs	1× pluggable 6-pole cage clamp terminal block (4 405 5028 0), for wires up to 1.0 mm²

Operation

Each channel (output) has a lever switch and two LEDs:

  1 = Pulse

  A = Auto (resting position)

One button per channel:

Switch position	Meaning
1 = Pulse	Execute action
A = Auto (resting position)	Input or FBox cont-rolled
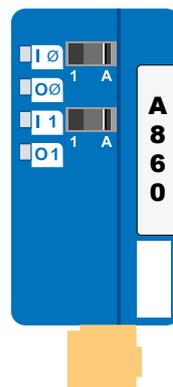
Two LEDs per channel:

LED	Color	Meaning
upper	single-colored (red)	shows input and push button status
lower	single-colored (red)	Indicates output status and missing external power supply (flashing).

Terminal designation

lever switch

LED

I Ø
O Ø
I 1
O 1

1 A

Description-label

A
8
6
0

Module-base-adresse

A
8
6
0

6	4	2
I Ø	I 1	
5	3	1

24VDC

O 1		O Ø	
1	2	3	4

250VAC

PCD3.A860
2 inp./2 out. 12A 250 VAC

CE

1x Plug for inputs
1x Plug for Outputs

Pin 1 in front

Terminals

Block schematic

Bus Interface (CPLD)

LED   LED

LED   LED

PCD3 I/O Bus

Micro Controller

Power Supply
+5V
+3.3V

Relais

Relais

Inp. Filter

Inp. Filter

Switch

Switch

O Øa
O Øb

O1a
O1b

+24V

GND

I Ø

GND

I1

GND
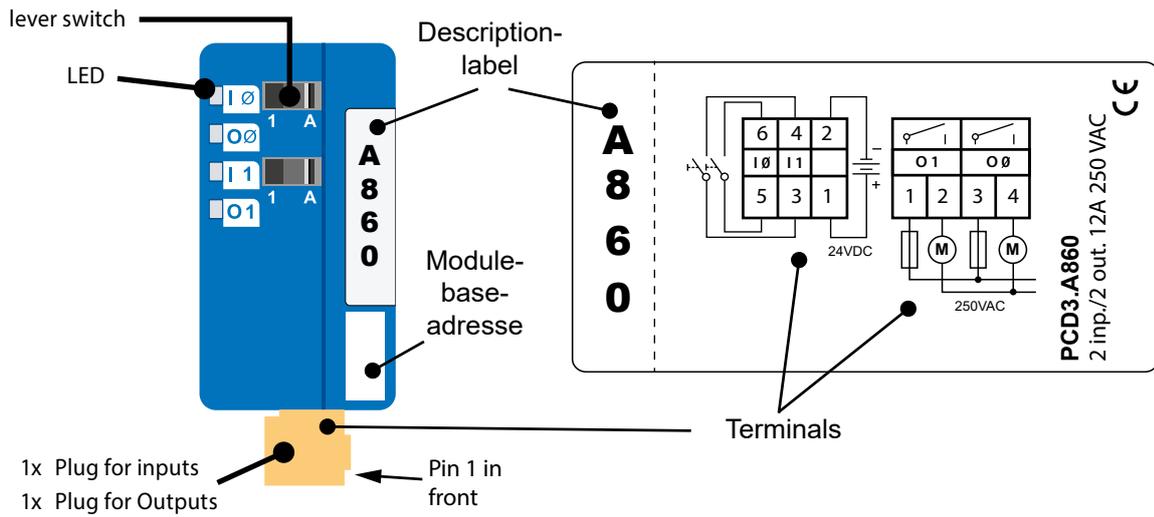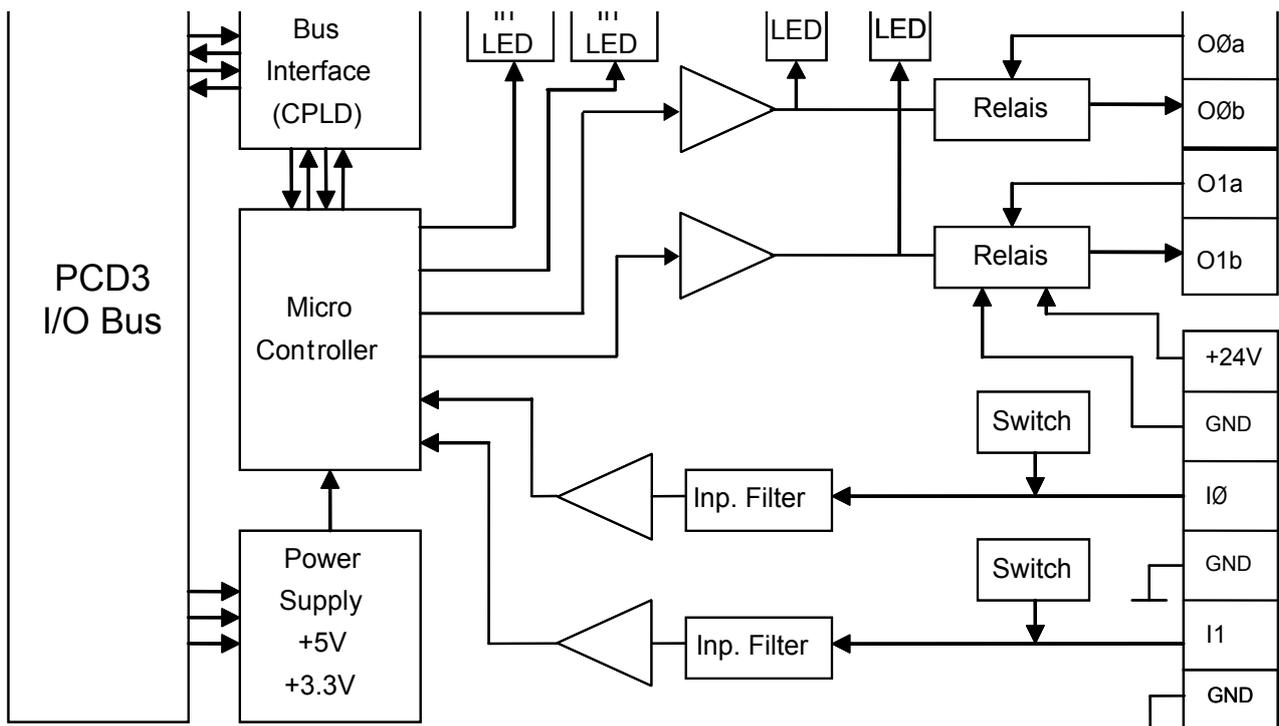
Function description

Function overview

Function	Keys / inputs:	FBox
Shade module	Fully up/down	Fully up/down
	Slat movement up/down	Slat movement up/down (variable)
	---	Stop all movements
	---	Reset module and reinitialise
	---	Block keys and inputs
Light module	On/off per channel (2x)	On/off per channel (2x)
	---	Reset module and reinitialise
	---	Block keys and inputs
Transparent module	2 digital inputs (24 VDC sink operation)	2 relay outputs

Shade function, general

With the shade function, the blind drive is connected in such a way that

Relay 0 (OØ) controls upward movement and
Relay 1 (O1) downward movement.

The two outputs are interlocked, so both outputs cannot be activated together. For the correct operation of shade control, the only input information should be from sensors.

The module is set up to use blind systems with integrated limit switches. Suppressors should be fitted externally. The module can be operated by the Saia PCD® via an FBox or via the inputs (blind/light switches) on the module. The choice of function and initialisation with the various times is handled exclusively by the F-Box, and must be carried out after activation.

Shade function, short move function

If a key (or ext. Input 0 / Input 1) is activated briefly, the corresponding relay switches on for the "short move time". If the key/input is activated for longer than the "short move time", the output will stay on for as long as the key is pressed. During a short move, the relay cannot be interrupted by any further input or key activation on the module.

PCD3.A860 - Shade function, short move function
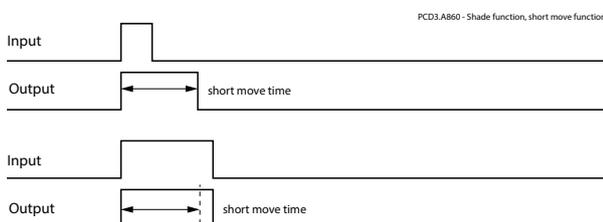
Shade function, hold function

If a key (or Input 0 / Input 1) is activated for longer than the defined "hold time", the module will switch to hold operation. The smallest value that can be set for the hold time is 1 (1/10 second), i.e. the module will switch directly into hold mode. In hold mode, the output (blinds up/down) stays on for the defined "move time". The module resets the output at the end of this time. The movement can be stopped by activating an

input. The processing of these times may be affected by accesses by the Saia PCD®. The hold function can also be activated via the FBox.

PCD3.A860 - Shade function, hold function

Stopping the movement

If an output is switched to hold mode, this will stop as soon as a new input pulse is detected, regardless of which key (direction) is pressed.

PCD3.A860 - Stopping the movement

Special case:

If both keys are pressed together and held down, Relay 0 will switch on and the long ("hold") movement will be executed. When the time has expired, Relay 1 will switch on immediately, and a long movement in the reverse direction will occur.

Light function

With the light function, a skylight is connected to each of Outputs O Ø and O 1. Activating an input / key switches the relevant output on or off. Each pulse at the input switches the output over (toggling).

Where multiple keys are provided for a skylight, they can be wired in parallel to the same output.

Transparent function

In transparent mode, the inputs/outputs are not interlocked. The card is used like a digital I/O card, except that it is controlled via an FBox.

RIO operation

The switches/keys cannot be read via "Monitorio".

Operation in an xx7 control

To use the module in an xx7 control requires FBs, which can be provided later on request. They do not have to be implemented in the "IO Builder".

! **Watchdog:** This module can be used on all base addresses; there is no interaction with the watchdog on the CPUs.

i Further information can be found in the document "27-600 Manual I/O Modules"

! I/O modules and I/O terminal blocks may only be plugged in and removed when the Saia PCD® and the external +24 V are disconnected from the power supply.

Ordering information

Type	Short description	Description	Weight
PCD3.A860	Light and shade, 2 relay outputs and 2 inputs	Digital light and shade module, 2 relais with make contacts, 2 inputs, Plug-in, type G (4 405 5027 0) and H (4 405 5028 0) included..	100 g

Ordering information equipment

Type	Short description	Description	Weight
4 405 5027 0	Plug-in, type G	Pluggable 4-pole cage clamp terminal block, for wires up to 2.5 mm^2, labeled 1 to 4, for Light and shade module PCD3.A860.	6 g
4 405 5028 0	Plug-in, type H	Pluggable 6-pole cage clamp terminal block, 2×3 pole for wires up to 1.0 mm^2, labelled 1 to 6, for Light and shade module PCD3.A860.	4 g

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