DATA SHEET

LL21 Motor control module

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PRODUCT DATA

Product name	Article-No.
LL21 Controller	01090021

Declaration of Conformity

CE We declare, that this product complies with the essential requirements of the Electromagnetic Compatibility Directive (EMV 2014/30/EU), the Low Voltage Directive (LoVo 2014 / 35 / EU) and the Restriction of Hazardous Substances Directive (RoHS 2011 / 65 / EU).
The complete Declaration is available in the download area of www.isolette.com

APPLICATION

Application for motor driven blind systems of ***ISOLETTE*** and **Interial** Type I-06 Mod 1 in Switch mode (SWITCH). Connection of max. 8 LL21-SMI-Motordrives per group. Installation optional on DIN-Rail or in flush-mounted box.

SHORT DESCRIPTION

LL21 Controller is a control module for **Type I-06 Mod1 Switch** and is used to control up to 8 LL21 SMI motordrives in switch mode without SMI communication technology (!).
It can be installed in a deep flush-mounted box or in suitable installation options that ensure electrical safety. An adapter enables mounting on a DIN rail. The functions of the controller are explained below.

TECHNICAL DATA

Output	4A during 24V (max. 0.5A per plug-connection
Operation Voltage	24VDC
Power Consumption	96W
Protection Class	IP 20
Dimensions	L: 51mm, W: 54mm, H: 43mm
Mounting Type	flush-mounted box; DIN rail
Application Area	Innenbereich
Operation Temperature	0°C ... +40°C
Housing box colour	black
Housing box material	Flame retardant ABS

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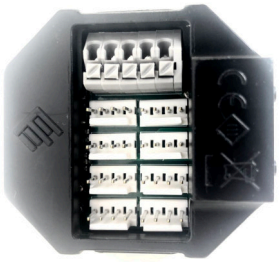
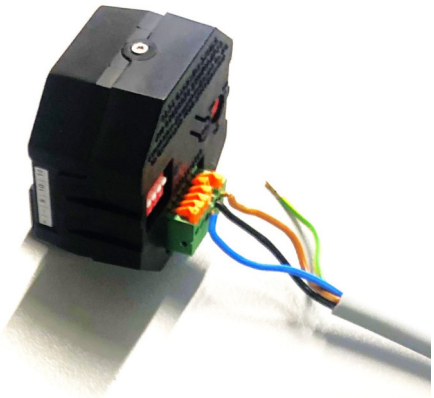
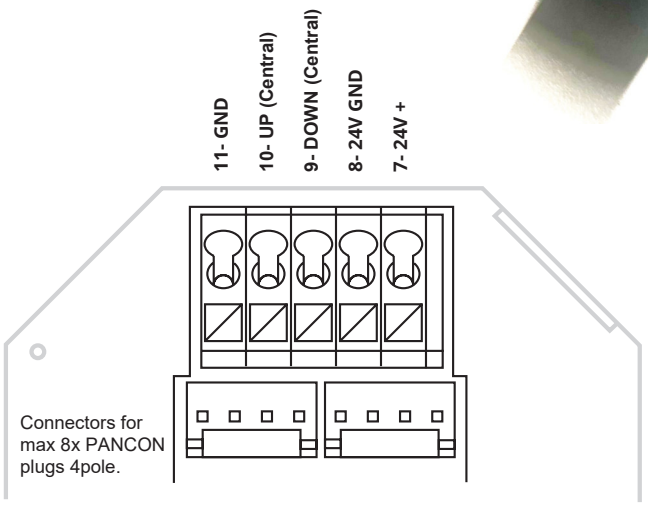
CONNECTION

The housing has connection parts on the front and the rear side.
On the rear side (Pic. 1) 8 Pancon- (MUSS100-4-D-E) and 5 clamp connections provide space to connect 24VDC power supply and a central control unit. On the front side (Pic. 2) 6 connections provide space to connect group control and single switch.

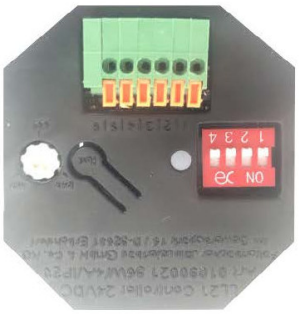
Picture 1: Rear side, box down

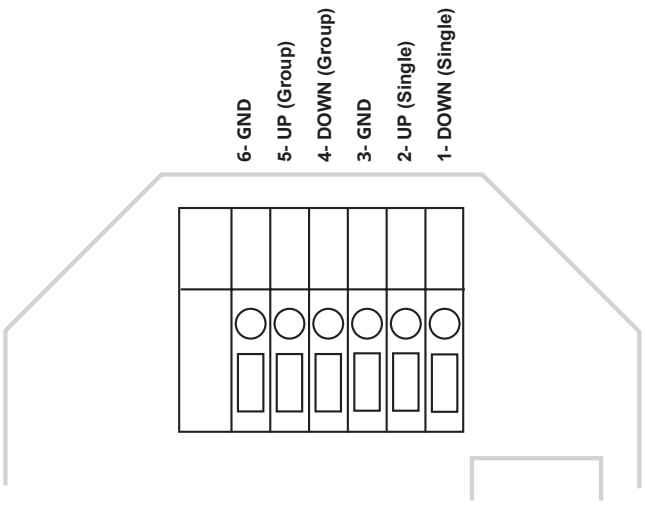






Picture 2: Front side, box up





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FUNCTION DESCRIPTION

General

In general, the LL21 Controller 24VDC includes the following functions:
• Processing of DIP switch and potentiometer settings
• Self-holding after 3 seconds for group and individual push buttons (via DIP switch)
• No self-holding for central control
-> Run time is defined by the higher-level control system
• Fixed “priority control”
-> Hierarchical order of control commands

Overview of command priorities:

Priorities *	Command Type
1	Central command (Up / Down)
2	Group command (Up / Down)
3	Individual command (Up / Down)

*1 has the highest priority

Rotation-Tilting

When the “Rotation-Tilting” function is activated (DIP2 = Off), the motors can only be driven up for the tilting time set via DIP4. Even multiple upward commands cannot exceed this time in total. If the motors are driven down for a period of time, they can then be driven up again for the same amount of time. The downward movement is not time-limited. In the event of a power failure, the upward movement time is stored.

LED Feedback

The multicolor LED is off during normal operation. A short button press or the application of power will display the current status for 5 seconds.

LED Colour	Status
Red blinking	Error in bus system / malfunction
Yellow blinking	During command output
Green	Ready for operation
Green blinking	Test run

Rotation-Tilting

The test run is triggered by a long button press and includes the following sequence:
1. All curtains move to the lower end position.
2. Ten seconds after the last curtain reaches the lower end position, all curtains automatically move back to the upper end position.
3. When all curtains have reached the upper end position, the test is complete. The status LED blinks green throughout the entire test run.

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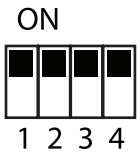
ADJUSTMENT OPTIONS



DIP Switch

The DIP switches are used to set additional functions.

DIP Switch 1
Toggle self-holding operation after 3 seconds - Default: ON
DIP Switch 2
Switch between full function (ON) and rotation-tilting (OFF) - Default: ON
DIP Switch 3
Toggle tilting command in the lower end position - Default: ON
DIP Switch 4
Switch the tilting time from “standard” (ON) to “extend” (OFF) - Default: ON

Note: The “extend” tilting time is intended only for 25mm slats.

Rotary Potentiometer

The potentiometer is used to set the slat angle in the lower end position.
The following marks indicate the position of the rotary potentiometer and the resulting slat position. Other positions can also be used; the resulting angle will be between the specified marks.

MIN	**Closed (Slat position approximately vertical - Default)**
CUT	**Group command (Up / Down) | Cut-Off (Slats in shading position)***
MAX	**Individual command (Up / Down) | Open (Transparency, slat position approximately horizontal)**

* Adjustment of the slats to prevent direct sunlight while still allowing visibility

OPERATION

Button

Short Button Press < 3 Seconds	**Status LED shows the current status for 5 seconds**
Long Button Press < 3 Seconds	**Starts the test run**
Short Button Press During test run	**Interrupts the test run**

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DELIVERY CONTENT AND TOPOLOGY

Delivery content
The LL21 Controller is workside ready packed in a Polybag.
The label contains the product declaration and the article number.

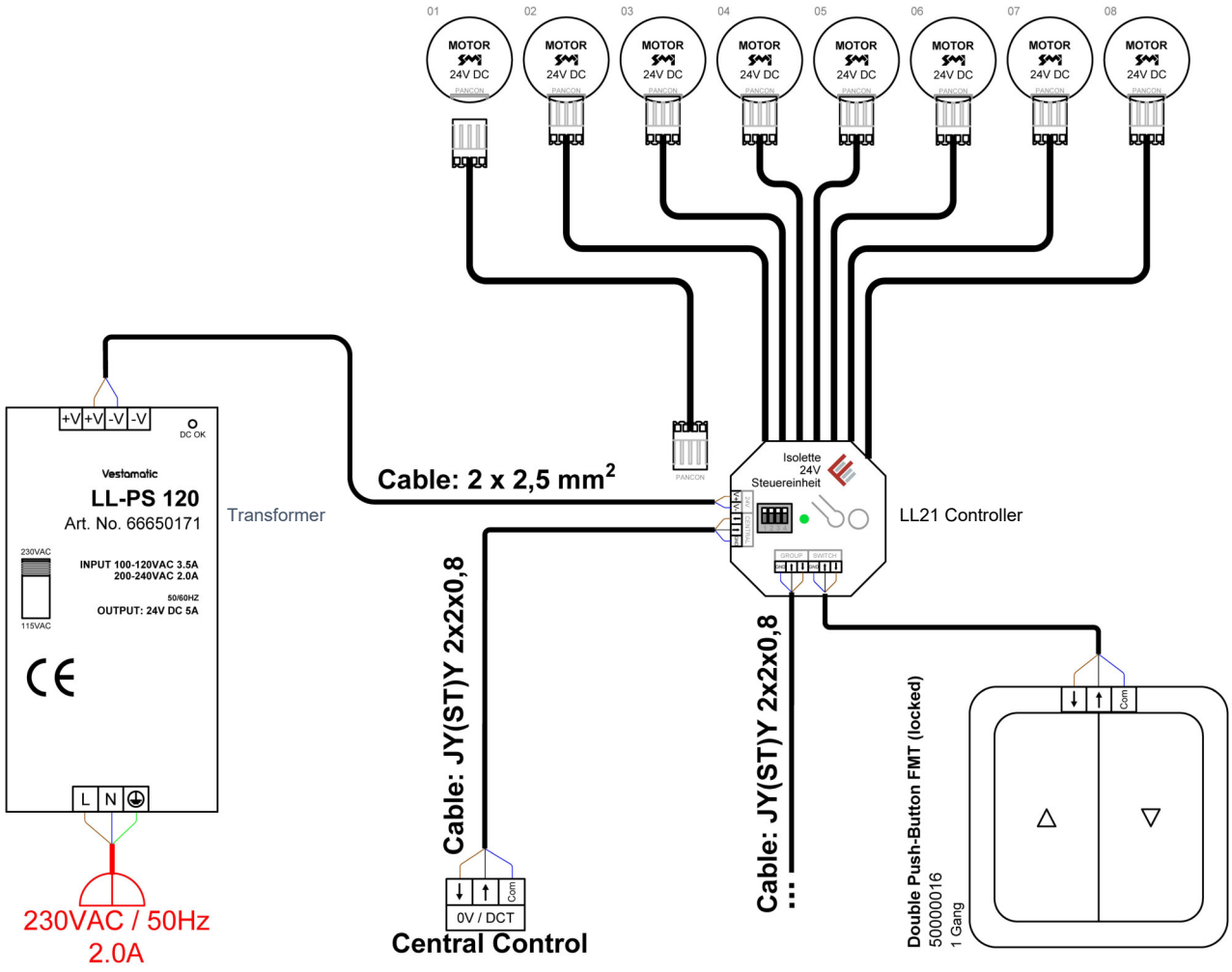
Attached in the package

- DIN-rail adapter with screw
- TecData sheet

The TecData sheet is also available in the Download area of www.isolette.com

Pic. 3: Controller, DIN-rail adapter, TecData sheet, Polybag.

Topology
The example topology shown here corresponds to the maximum possible pin assignment.



Pic. 4: Topology-sample

As an alternative to the button commands, input commands from KNX/EIB actuators for 24VDC drives or low-voltage central controls or radio controls can also be transmitted in switching mode I-06 M1 Switch.
To attach the DIN rail adapter, the short screw on the underside must be replaced with a long screw that is supplied (See package leaflet).

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IMPORTANT SAFETY INSTRUCTIONS

- Engage a certified electrician for the installation.
- The controller must be inspected for any damages.
- If it is damaged, it must not be put into operation under any circumstances. In the case of damage during transport, the supplier must be informed.
- The controller is intended only for proper use (as described in the operating manual). Any changes or modifications are not allowed, otherwise, any warranty claims will be void.
- If safe operation of the controller is no longer guaranteed, the controller must be taken out of service immediately.
- If any work is being carried out on the shading system or its components, they must be secured against unintentional operation.
- Technical data can be found on the controller's nameplate.
- Do not allow children to play with electrical components and keep them out of reach of children.
- The entire electrical system must be regularly inspected by qualified personnel for any defects or damage.

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