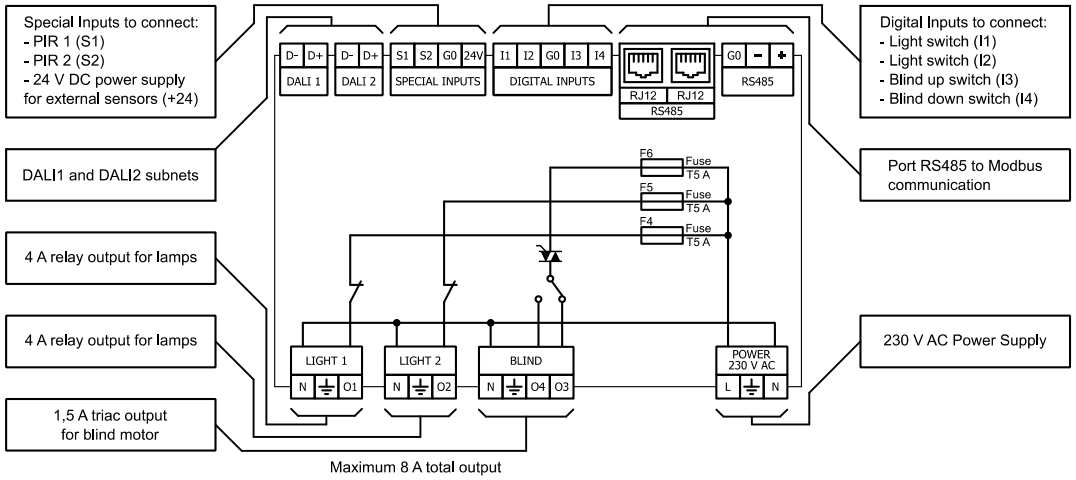
Intelligent Solution Managing Automation

iSMA-B-2D1B

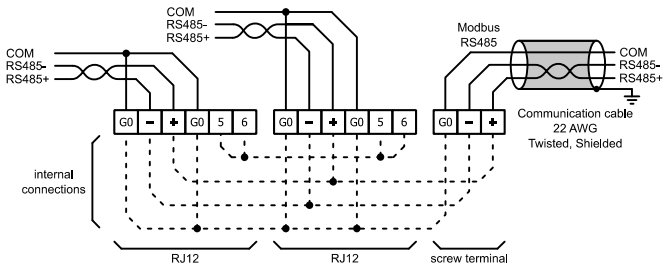
version 1.0

SPECIFICATION	
Supply	230 V AC
Power Consumption	Max. 8 VA
Special inputs	2x dry contact
Digital inputs	4x dry contact inputs for light and blind switches
Digital outputs	2x relay outputs for lights; max. load 4 A @ 230 V AC 1 TRIAC output for blind with interlocked relay direction switch; max. load 1,5 A @ 230 V AC
Interface	RS485, 2x DALI interfaces (max 16 devices, integrated power supply with 40 mA current limit for each interface), USB
Ingress Protection	IP40 - for indoor installation
Temperature	Operating: 0°C to +50°C; Storage -40°C to +85°C
Relative Humidity	5 to 95% RH (without condensation)
Connectors	2.5 mm^2 screw terminals
Dimensions	123 x 137 x 55 mm
Mounting	DIN rail mounting (DIN EN 50022 specification)
Housing material	Plastic, self-extinguishing PC/ABS

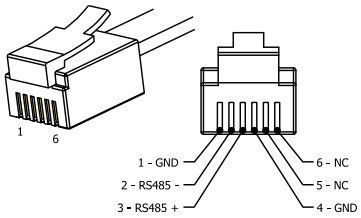
BLOCK DIAGRAM



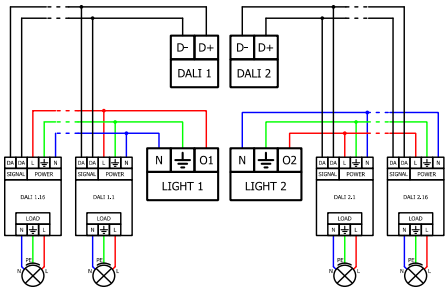
COMMUNICATION



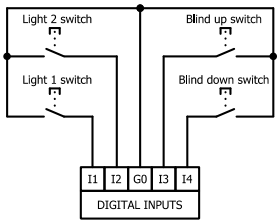
RJ12 PIN DESCRIPTION



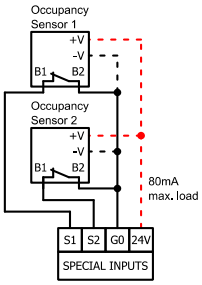
DALI INTERFACE



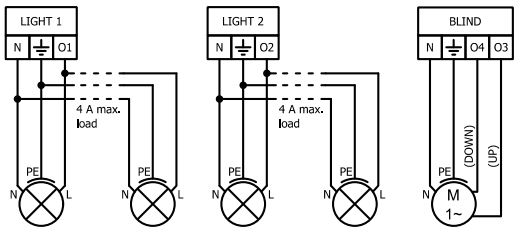
DIGITAL INPUTS



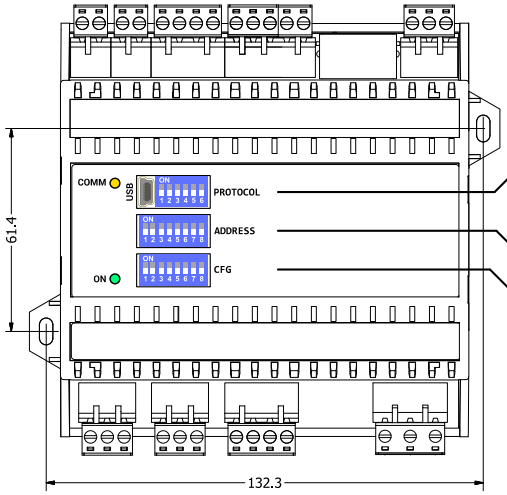
SPECIAL INPUTS



OUTPUTS



DIMENSIONS / TOP PANEL



BAUDRATE 1,2,3	PROTOCOL 4,5	BIT 6
000 USER 010 4800 011 9600 100 19200 101 38400 110 57600 001 76800 111 115200	00 MODBUS RTU 01 MODBUS ASCII	ON = Factory default

BITWISE ADDRESS CONFIGURATION
E.G. ADDRESS 87 = 01010111

BIT1	DI1, DI2 SWITCH TYPE	OFF - MONOSTABLE ON - BISTABLE
BIT2	DI1 CONTROL MODE	OFF - DALI1 ONLY ON - DALI1 + DALI2
BIT3	SI1 CONTROL MODE	OFF - DALI1 ONLY ON - DALI1 + DALI2
BIT4	DI2 CONTROL MODE	OFF - DALI2 ONLY ON - DALI1 + DALI2
BIT5	SI2 CONTROL MODE	OFF - DALI2 ONLY ON - DALI1 + DALI2
BIT6	LIGHT CONTROL MODE	OFF - DALI CONTROL ON - RELAY CONTROL
BIT7	DI3, DI4 SWITCH TYPE	OFF - MONOSTABLE ON - BISTABLE
BIT8	BLIND CONTROL MODE	OFF - BLIND ON - SHUTTER

⚠ WARNING ⚠

• Note, an incorrect wiring of this product can damage it and lead to other hazards.
• Make sure the product has been correctly wired before turning the power ON.
• Before wiring or removing/mounting the product, be sure to turn the power OFF. Failure to do so might cause electric shock.
• Do not touch electrically charged parts such as the power terminals. Doing so might cause electric shock.
• Do not disassemble the product. Doing so might cause electric shock or faulty operation.
• Use the product within the operating ranges recommended in the specification (temperature, humidity, voltage, shock, mounting direction, atmosphere etc.). Failure to do so might cause fire or faulty operation.
• Firmly tighten the wires to the terminal. Insufficient tightening of the wires to the terminal might cause fire.

BLINDS CALIBRATION PROCEDURE

The calibration process is necessary always when the blind\shutter is used for the first time or when there is a need of recalibration or restoring to the default settings. The time values are written into BLIND_UP_TIME/ BLIND_DOWN_TIME registers (values in the registers equal 0 by default).
The difference between BLIND_UP_TIME\BLIND_DOWN_TIME values from the first calibration and recalibration process cannot be greater than 20%.

The calibration can be run by monostable pushbuttons or three-state bistable pushbuttons.

1. To start the calibration process the roller-blind/shutter should be in the closed, lowest position.
2. Next, the roller- blind/shutter needs to be pulled up to the desired maximum position.
3. The roller-blind/shutter then needs to be pulled down back to the closed, lowest position.
4. Steps 2 and 3 should be repeated to complete the callibartion process

In order to complete the callibration process properly the following conditions must be fulfilled:

1. The difference between previous saved open/close time value and the average open/close time value obtained in the calibration process cannot be greater than 20%, unless previous saved value is '0'.
2. The gap between two open time values cannot be greater than 20%.
3. The gap between two close time values cannot be greater than 20%.
   Example: The first open time is 20 seconds, the second one can not exceed 24 seconds and can not be lower than 16 seconds.
4. Each open/close cycle needs to be initiated within 3 seconds of the end of previous one.

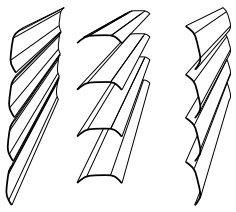
If the the above conditions are met, the open time values and the close time values are averaged and written to the BLIND_UP_TIME and BLIND_DOWN_TIME registers. This is indicated by a quick up and down movement of the slats in case of the shutter control or quick up and down movement of the blind.

SLATS CALIBRATION PROCEDURE

The calibration process is necessary if the time of opening of the slats differs from the one stored in the SLATS_OPENING_TIME register (1 second by default).

The calibration can be run by monostable pushbuttons.

1. To begin the calibration process the slats should be completely rotated down as seen on the figure (position 1).
2. From this position the slats need to be completely rotated up (position 2 on the figure) by short presing the up button. Each press of the button rotates the slats by a step proportional to the value stored in SLATS_OPENING_TIME.
3. The slats need to be rotated down back to position 1.
4. The points no. 2 and 3 need to be repeated.



In order to complete the callibration process properly the following conditions must be fulfilled:

1. To complete the rotation cycle, the number of rotation steps to open slats should be equal to the number of rotation steps to close slats.
2. The number of rotation steps in the rotation cycle must be greater than 5 and lower than 15.
3. Each open/close cycle needs to be initiated within 3 seconds of the end of previous one.
4. SLATS_NUMBER_OF_STEPS register needs to be set at the default value of 10 steps.

If the the above conditions are met, the new open time value is calculated by multiplying the old SLATS_OPENING_TIME by the number of open/close steps made in the calibration cycle and then dividing the result by 10.
Example: SLATS_OPENING_TIME value is 1000 ms. Twelve steps are needed to complete the rotation cycle in the calibration process. The new value stored in the register is: (1000 ms * 12) / 10, which gives 1200 ms.