IR31DIM-SA NMEA/Pulse dimmer with Light sensor

User instruction

The IR31Dim has 2 modes of operation:

- Manual – The user can press up and down to change the dimming level. Either with 4 steps, or with 10 steps(default)
- Automatic – The internal light sensor (or external if connected) detects the light level and changes either 10 levels or 3 levels (Day, Twilight, Night)

The Mode is changed by pressing the middle 'SET' button. Green LED = Auto, Off=Manual

Adjusting the light level of each level (if activated, default off)

- If the level up or down does not show the level you require. Press and hold the up or down, this will adjust the % dimming. When the desired level is reached, the set button will flash for 5 seconds, if it is pressed in this time the setting will be saved.

Resetting to the default light and % settings

If adjustment has failed, or become too complicated, the system can be reset by pressing and holding the set button (10 seconds) A reset is confirmed by flashing the button backlight LEDS in turn.

Master reset

To reset all settings and saved formats, press SET during power up

Adjusting the Mode of operation

The system has 7 options. To access these Press set for about 3 seconds until the indicator becomes bright red or green. The number of the option is indicated by the backlight of the up down and set buttons. The status of the option is indicated by red or green of the indicator.

Options are as follows:

Option number	Description	default	Button up	Button Set	Button Down	indicator	
0	4 level (on) or 10 level(off)	ON	off	off	off		**Gn on** Rd off
1	IIDDC sentence Channel 1*	ON	off	off	ON		**Gn on** Rd off
2	Proprietry sentence Channel 1	Off	off	On	off		Gn on **Rd off**
3	IIDDC sentence Channel 2*	ON	off	ON	ON		**Gn on** Rd off
4	Proprietry sentence Channel 2	Off	ON	off	off		Gn on **Rd off**
5	Adjust levels with long press	Off	ON	off	ON		Gn on **Rd off**
6	Allow Auto mode	ON	ON	ON	off		**Gn on** Rd off

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Adjusting the system using the Skipper service software.

All adjustments can be made using the service software. For this to work, the pc must be connected via RS422/NMEA to the input and output of the unit.

The PC will download the 10 point table. The values can be adjusted and the dimming sensor level for the change of the level in auto mode.

Start the service software and select the com port that is connected to both input and output.
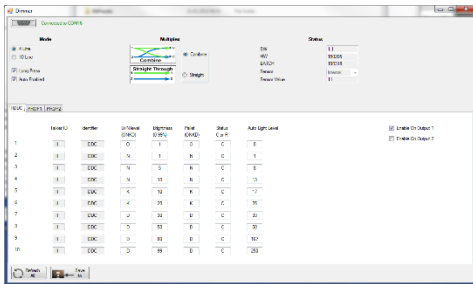
	The top part shows the modes the system is working in • 4 line using just Colour schemes • 10 line using % and colour schemes • Long press – to allow changing of the dimming levels using long presses of the up down, and set to save. • Multiplex or not (input 1 and 2 combined, or 1 to 1, 2 to 2) Status of the sensor and which sensor is in use.
	The tabular part showing programming of DDC standard messages • Each of the 10 levels can be programmed to pallettes and % • Each level can be linked to a light sensor sensitivity 1-256
	On each output there is a prorietry sentence that can be built up with up to 5 fields exactly as the customer wants To activate the sentence on the available ports use the checkbox to the right.
	To save or refresh, use these buttons. It is also possible to save and read from file.

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Connecting to more than 2 displays or units

A normal NMEA splitter or expander can be used to connect the outputs to other systems. All skipper Multi products can receive the messages from this unit. And the levels for the 4 level mode, can be adjusted on the dimming setup display. for Off, Night, Twilight and Day.

SKIPPER recommend the NE108 Expander.

Connections on the IR31 DIM

The Unit has 2 Pluggable connectors, on the larger connector, Power, external light sensor and pulse up , pulse down output (relay).

On the smaller connector NMEA 1 ,2 input and NMEA 1, 2 outputs. Messages on NMEA 1 input will be repeated onto NMEA 1 output, the Dimming message will be multiplexed to that. The same on channel 2.

Light Sensor.
The switch should be placed in an area where overhead lights or night lights will not affect it, if this is not possible, or the light level that the switch is switching is different where the switch is, use the external light sensor IR31SENS.

Water ingress
The unit is tested to IP56 on the front side. IP2X at the rear. Ensure the supplied o ring is in place, and the mounting surface is clean and smooth to achieve this IP grade.

Grounding
Supply the unit with 24VDC and connect the ground pin to chassis

Limits of the system
The system will not tolerate inputs with lots of input data (4800 baud, 1 Hz, max 3 messages per channel recommended. Max 4 messages total when using combine mode)

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1: NMEA1 IN +		1: DC24V +
2: NMEA1 IN −		2: GROUND
3: NMEA2 IN +		3: DC0V
4: NMEA2 IN −		4: SENSE VDD
5: NMEA1 OUT +		5: SENSE SDA
6: NMEA1 OUT −		6: SENSE SCL
7: NMEA2 OUT +	NMEA + =B	7: SENSE GND
8: NMEA2 OUT −	NMEA − =A	8: PULSE UP
		9: PULSE COM
		10: PULSE DOWN
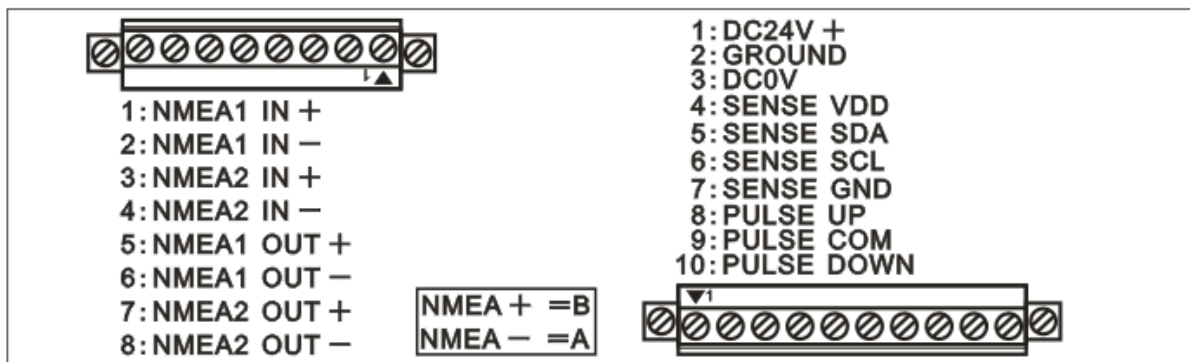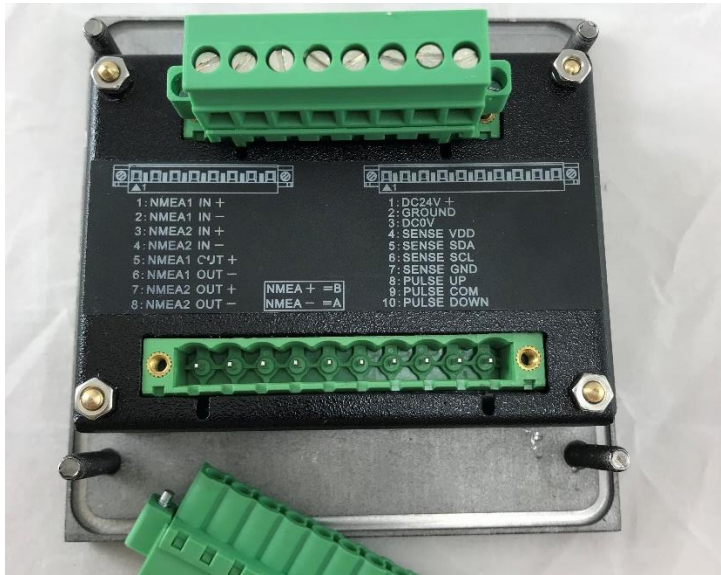
External sensor (IR31SENS-SA)

The system operates from a single light sensor, if the external sensor is connected this will take priority over the internal sensor. Wiring of this is as labelled on the cable but is as follows

Colour	Pin number	Function
Red	J2-P4	Power (3.3V) to sensor
White	J2-P5	SDA DATA from sensor
Blue	J2-P6	SCL Clock to sensor
Black	J2-P7	0V to sensor

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Specification

Item	Description
Input power	24V Nominal (21-32V)
Power consumption	<5mA (1W)
Inputs	2 x NMEA 0183 (IEC61162-1) isolated
Outputs	2x NMEA 0183 (IEC61162-1)
Output Messages	IIDDC Dimming IIDDC,X,%%,X,C*nn (where X is O,N,K,D and %% is light percentage 00-99) $AABBBB,CC,DD,EE,FF,GG,HH*nn (10 variants) Vers (Version number) Proprietry setup messages on request (eg PSKPDIM) PSKPDIM3,<lightlevel1-255>*nn
Allowed input messages	All within standard and at 4800 baud are repeated through the system - PSKPDIM messages for setup
Pulses	Up pulse and down pulse relays
Modes of operation	Manual – User presses up and down to shift between 10, or 4 levels Auto – Light sensor is used to change levels
Light- levels	Sensors detect light levels from 0Lux to 1200Lux
Approvals	IEC60945
Options	IR31Sens External light sensor on 1.5m cable
Setup	Setup of Modes and some light levels via set button Service software connected via NMEA provides all available options
Compatibility	Repeaters: CD401MR, CD402XX, IR300, IR301, Systems: DL2,ESN100,ESN200,DL1,SL1200, SD21, all future Skipper systems Others. DDC compatibility, Pulse compatibility, OEM message compatibility.

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CUTOUT

Ø3,2 (x4)

87

82

65

70