Exalto
WIPER TECHNOLOGIES

USER MANUAL

Exalto Wiper controller for two HD/MD wiper

ITEM NO. 11079/11087/11085

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Contents

1. General

1.1 Functions

Brief explanation of buttons and LED's Please see section 4 for complete operating instructions.

Pos.	Function
1	Main ON/OFF switch/wipe-wash program.
2	Increase speed
3	Decrease speed

1.2 General description

The 210342 is a micro-controller based intelligent switch for operating two Exalto HD/MD wiper motor. It provides all the functions for a proper windscreen cleaning. It consists of a touch pad with 45 cm (17") connection cable.

This wiper control offers:

- two continuous speeds
- three intermittent speeds
- activating / deactivating each wiper one by one;
- synchronosation in each selected mode;
- self parking due to dynamic brake
- wipe/wash program
- dimmer input

Visual indications for ON, continuous and intermittent modes.

1.3 Power supply

This wiper control is available to operate under a power supply of 12 or 24V DC. Check the power supply of the unit supplied, before connecting it to the ship's electric system.

1.4 Technical specifications

Model	11079 and 11087	11085
Wiper motor	223 / 232 / 235-series	
Voltage	10V to 30V DC	10V to 30V DC
Internal fuse	4 Amp, self-resettable PTC	
Stand-by current	less than 20 mA	less than 20 mA
Protection	polarity inversion	polarity inversion
Motor - output current	low or high speed - 4 Amps max.	low or high speed - 12 Amps max
Input	2 parking switch (open in park protection) dimmer (connect to + if not used)	2 parking switch (open in park protection) dimmer (connect to + if not used)
Output	2 low speed - L and R motor LOW 2 high speed - L and R motor HIGH 1 wash pump (positive pole)	2 low speed - L and R motor LOW 2 high speed - L and R motor HIGH 1 wash pump (positive pole)
Functions	3 intermittent (210342) or 1 intermittent speed setting (201342S) 2 continuous speeds (low and high speed) wash / wipe program and separate wiping for each motor (201342) wash / wipe program and synchronic wiping of both motor (210342S)	3 intermittent speed setting 2 continuous speeds (low and high speed) 1 wash pump (positive pole)

Model	11079 and 11087		11085
Connections	10 poles connector - 2 male 6,3 mm fast-on	**relay box** 2 four poles connector 3 female 6,3 mm fast-on 1 eight poles tel. connector	**console** 1 four poles minifit connector 1 eight poles tel. connector
Case	ABS black		ABS black
Working temperature	-10 °C / +50 °C		-10 °C / +50 °C
Storage temperature	-20 °C / +70 °C		-20 °C / +70 °C

1.5 Declaration of conformity

This wiper control is in conformity at requisition of electromagnetic compatibility and of security with directives, 2014/30/EU 9EMC) and 2011/65/EC (RoHS)

Harmonize norms apply:

- CEI EN 60945 ed 2003 + IEC 2018-04: MARITIME NAVIGATION EQUIPMENT AND SYSTEMS
- EN 50581 ed 2012: RoHS

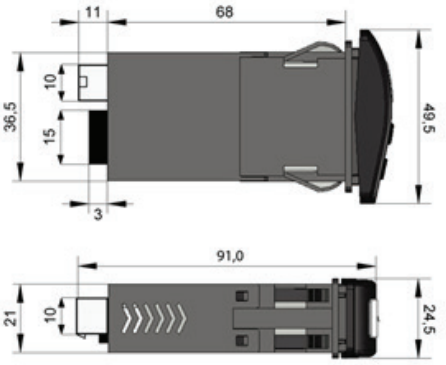
Supplementary information:

- The European directive 2014/35/EU (Low Voltage) is not applicable to this product as this device is powered by voltage values below 50Vac or 75Vdc.
- The cabling systems that will be installed on the product, should be conform their own safety requirements. The system complied with the requirements of IMO A.813 Decision about protection against interference on maritime radio communications.

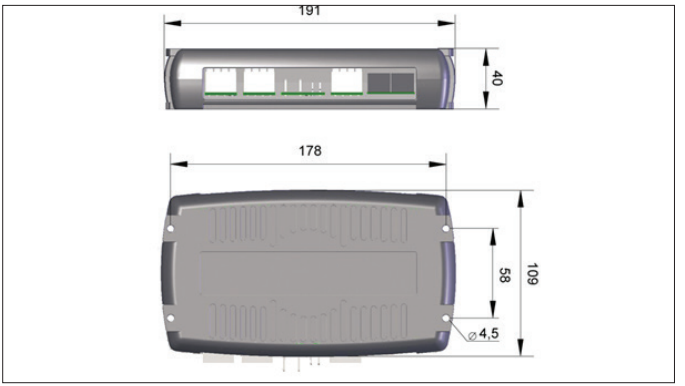
2. Installation

2.1 Dimensions

All dimensions in mm.



Dimensions relaybox in mm (only for the 11085 version).



2.2 Installation

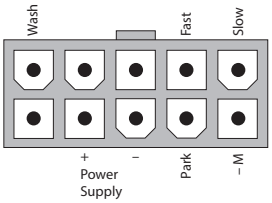
Fit the touch pad at a location that is within suitable reach to allow for ease of operation. Make sure that sufficient room - t least 100 mm space - is available for the cables and the connectors. The required mounting hole for the touch pad is 36.5 x 21 mm.

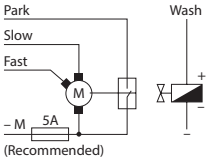
Important

Protect the power supply line(s) by a thermal/magnetic circuit breaker and cables diameter must be sized according to the motor consumption and the regulations. Please make sure you insert the connector (linked to the wiper motor) before connecting the power supply!

3. Electric connections

3.1 General switch plug lay out

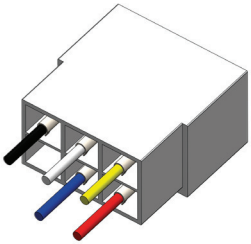




3.2 Wiring diagram

Colour coding for wiper motor.

Function	Polarity	Motorcode	Switch code	Cable
High speed	+	53b	H	White
Low speed	+	53	L	Yellow
Negative	-	31		Black
Stop - self park		31b	P	Blue
Positive	+	53a	B	Red



Colour code and connection of wiring coming from the 210342 controller:

- Green is to be connected to the Positive (53a) of the motor wire.
- Blue is to be connected to the Negative (31) and Stop/Self Park (31b) of the motor wire.
- Yellow is to be connected to the Low Speed (53) of the motor wire.
- White is to be connected to the High Speed (53b) of the motor wire.
- Brown is to be connected to a pump or solenoid.

Always refer to the User Manual as supplied with the Exalto Wiper before connecting the Exalto wiper to the wiper switch.

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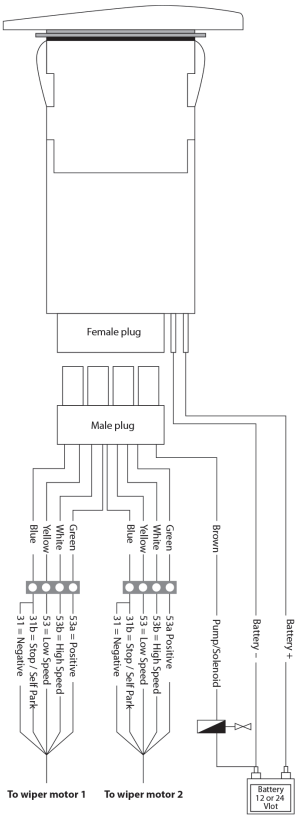
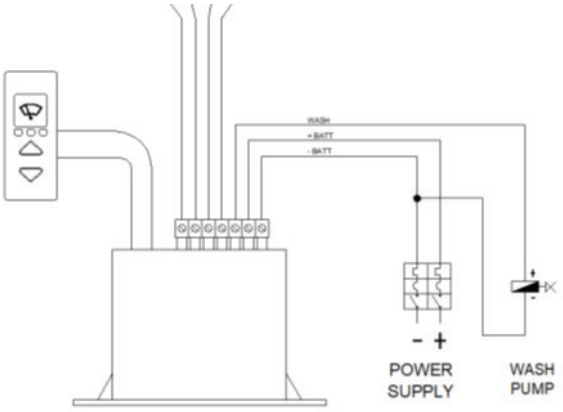


Connections to relay box (only the 11085 version)



4. Operation

4.1 Functions of the push buttons

All push buttons have a double function as described in the chart (see paragraph 4.4).

4.2 ON/OFF switching

By pressing and releasing button 1 or 2, the wiper can be switched ON or OFF. By pressing button 1 a fast blinking LED will indicate the new wiper selection as in following chart:

Mode	LED (□ = on)	Signal
Both wipers ON	□ ■ □	Fast blinking
Right wiper only	■ ■ □	Fast blinking
Left wiper only	□ ■ ■	Fast blinking
Both wipers OFF	■ ■ ■	LED's OFF

4.3 Increase speed - decrease speed - intermittent mode selection

The wiper motor starts in SLOW speed mode (if one speed-motor is used).

- By pressing button 2, the motor will power FAST SPEED.
- By pressing button 3, you can step down through the speed modes:
  - LOW SPEED - 2 SEC. INTERMITTENT - 4 SEC. INTERMITTENT - 8 SEC. INTERMITTENT.
- By pressing button 2 you can step up through the speed modes.

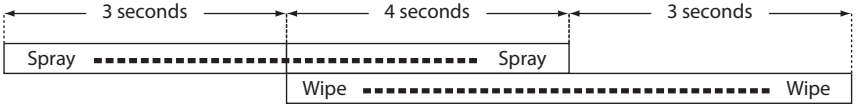
4.4 Signals mode

The three LED's shows the controller operation setting. By pressing any button, the mode will change. The LEDS will flash as many times as the delay times (in seconds) between the wiper strokes or the LED's will have a light flash (slowly when SLOW speed is selected and quickly when FAST speed is selected).

Mode	LED (□ = on)	Signal
FAST speed	□ □ □	Fast slight blink
SLOW speed	□ □ ■	Slow slight blink
2 sec. delay	■ ■ □	2 slow blink
4 sec. delay	■ □ ■	4 slow blink
8 sec. delay	□ ■ ■	8 slow blink
OFF	■ ■ ■	LED's OFF
Wipe/wash	□ ■ □	
Failure	Asymm.	Continuous flashing signal

4.5 Wipe/wash program

This wiper control has a built-in 'smart' wipe/wash program. The program is as shown below. By keeping button 1 pressed for more than one second, the Wipe/wash program will be activated. After the Wipe/wash program has ended, the wiper will return to the wipe setting that was previously used.



5. Failure

5.1 Continuous flashing signal

A continuous flashing signal indicates that the 210342 does not receive one or both parking switch signals or it is not possible to reach synchronism. This may occur if:

- one or both parking switches are damaged or disconnected;
- one or two wiper motors do not run (damaged or disconnected);
- one or two wiper motors do not run in fast or slow speed;
- wiper motors run at too much different speeds and it is not possible to reach synchronism;
- 10-pin connector has been inserted after power supply and control works as with one speed motor.

5.2 Reset function

With any failure it is important you first perform a reset process to the control system:

- turn power off to the wiper controller
- remove the 10-pin connector from the back of the console
- inspect that all terminals are located correctly and in position
- make sure the motor is connected correctly to the console
- wait 30 seconds
- reconnect the 10-pin connector to the back of the console
- turn power on
- test operation of the wiper controller
- if problems continues, check notes on section 5.1

6. Available models

- 11079/210342: Wiper controller for 2 wiper, max 4mA;
- 11084/210342J: Wiper controller for 2 wiper, max 6mA;
- 11085/210342P: Wiper controller for 2 wiper, max 12mA;
- 11087/210342S: Wiper controller for 2 wiper, max 4mA (no motor selection);
- 11088/210342SJ: Wiper controller for 2 wiper, max 6 mA (no motor selection);
- 11089/210342SP: Wiper controller for 2 wipers, max 12mA (no motor selection;
- 11083/210342/1: Wiper controller for 2 wipers, max 4 mA, 1 intermittent speed.

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