

INSTALLATION GUIDE

CTRL-FL1^{MC}

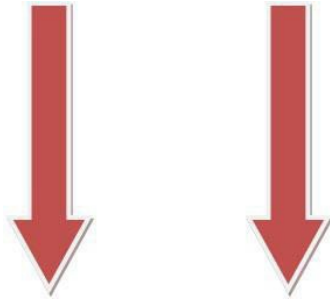
Arrow signaling controller



WARNING

Before proceeding to the system,
Take the time to read and understand the instructions in this guide.

WARNING



IMPORTANT

This document provides all the necessary informations for the proper and safe installation of your system.

Before proceeding with the installation or configuration of your **CTRL-FL1^{MC}** system, the technician must first have read and understood the instruction in this.

This document contains important information to prevent the risk of serious injury to users and installation technicians.

The CTRL-FL1MC system Zone Technology Electronics Inc. is fully programmable (all parameters are flexible).

To reach technical support for all questions concerning :

PROGRAMMING AND OPERATION

Of modules manufactured or distributed by *Zone Technology Électronique Inc.*,

Contact :

Technician (service and repairs)
(450) 572-1476 post : **205**

MODULE INSTALLATION IN VEHICLE

Contact :

Garage
(450) 572-1476 post : **202**

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GENERAL DESCRIPTION OF THE MODULE

The CTRL-FL1^{MC} module allows you to control a signal arrow with or without elevation and a three auxiliary outputs. This compact module has the advantage of controlling everything without external components (except the main fuse on supply line).

Note that all outputs are protected against short circuits internally by circuit breakers.

ESSENTIAL CONNECTIONS

As there can have many accessories related to CTRL-FL1^{MC} module, it is essential to ensure that critical connections are perfectly executed.

Important connections to monitor :

- The negative (black wire) of the CTRL-FL1^{MC} module;
- Power supply (+12V on the supply terminal);
- Ignition (+12 V).

TECHNICAL SPECIFICATIONS

Operation voltage.....10 à 16Vcc

Operation temperature:-40°C à 75°C (-40°F à 167°F)

Electric consumption: - Without ignition (closed keys)..... 1.27 mA
(voltage input at 14V) - With ignition (no load)..... maximum 270mA

Output: - Arrow supply:..... 12V, 15A
- Arrow channel 3A/channel

MOTOR MODE « ON » : Point #7, Programmation Section.

- Motors (MOT + / MOT -)20A
- Auxiliary : - With motor 12V, 5A
- Without motor 12V, 10A

MOTOR MODE « OFF » : Point #7, Programmation Section.

- Auxiliary (MOT + / MOT -)..... 10A
- Auxiliary (AUX) 12V, 10A

Table of outputs description

<i>#Output</i>	<i>Description</i>
1	Arrow Supply
4	MOT-
5	MOT+
6	AUX
7 à 11	Arrow Channel (A à E)

INSTALLING

CTRL-FL1^{MC} MODULE

WARNING

Pay a particular attention on safety instructions and on installation instructions of this guide to prevent damage to the module or to the vehicle as well as the serious injuries to you, to the occupants or every person working on the vehicle.

The technician needs to have a very good knowledge of the automobile electricity and electronics and clearly understood the safety and installation instructions before proceeding to the installation of this module.

To make sure this product works with an optimal efficiency, protect all the electric and mechanical components according to the current standards.

Once the installation is completed, verify all the functions of the system and the vehicle to make sure everything works correctly and according to the standards.

MECHANICAL INSTALLATION

Installation of the CTRL-FL1^{MC} module

During the installation, assure that there is no risk to damage the module by any unsecured objects in the vehicle and that the chosen location will not expose the module to rain, snow or salt.

The module must be installed in the Le module doit être installé dans l'habitacle du véhicule ou dans un boîtier étanche

The module is design to support a temperature range of -40 C à 75 C (-40 F à 167 F).

The module also has its own built-anchor base and can be installed at any angle (even reversed). There are several ways to fix the module, the installation technician must consult the user in order to best meet its needs. It is strongly recommended to fix it so that it is accessible to the user at all times and under all operating conditions.

Ensure that the module is set so as not to move when a key is pressed.

ELECTRICAL INSTALLATION

Please make the necessary connections for the operation of the system and its components. Install all electrical protection (fuse, circuit breaker, fuse wire) on power wire, as close as possible to the power source. All wire passing through a wall to be protected by a rubber or plastic washer.

Please follow all installation recommendations found in this guide.

CAUTION: Before installation, please disconnect the negative battery of the vehicle. Failure to follow the recommendations found in this guide, could result in fire or personal injury.

Please wait until all electrical connections are completed and checked before reconnecting the battery

PROGRAMMING

The **CTRL-FL1^{MC}** module has a programming philosophy that allows quick and easy configuration of several parameters **CTRL-FL1^{MC}** module.

To change a parameter, a combination of 1 or 2 keys must be pressed simultaneously on the keyboard and held for at least two seconds.

According to the key or keys pressed at length, different programs will be available. See the table below for a list of available programming.

Note that several programming menus provide a choice of menus, pay attention to the description of each programming mode.

To quit the programming mode, press and hold the key 5 for at least 2 seconds.

Note that each programming must be made independantly from the other.

Arrow motor

This table contains the different programmations in connection with the engine of the arrow

N.B. Please note that the CTRL-FLI^{MC} contains an actuator controller that control the automatic detection of the cylinder stroke end (for Zone Technology cylinders with no clutch). It is still possible to control the cylinder stroke with a maximal displacement timer.

FONCTIONS	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Programming time up / down of the arrow	Keys (←) and (AUX)	<p>Used to enter the programming menu of the rise time and fall of the arrow.</p> <p>The configured time is a maximum. The CTRL-FLIMC module is designed to detect the current peaks of the motor.</p> <p>The engine stops by itself if it encounters an obstacle, too much resistance, or the end of its travel.</p> <p><u>Programming the rise time:</u></p> <ol style="list-style-type: none"> 1. Make sure that the key (←) is off and enter the menu, the engine will activate, rising. 2. Save the rise time by pressing the (AUX) button when the arrow reaches its maximum. <p><u>Programming the fall time :</u></p> <ol style="list-style-type: none"> 3. Make sure that the key (←) is activated and enter the menu, the motor will activate, falling. 4. Save the falling time by pressing the (AUX) button when the arrow reaches its maximum. <p><u>Default configuration :</u></p> <p>By default, the rise time is 10 seconds uphill and downhill. The maximum time is 5 minutes.</p>

FONCTIONS	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Motor Selection	Press & Hold Keys (←) and (→)	<p>Allows the use of motors outputs as auxiliary outputs.</p> <p><u>Programming:</u></p> <p>The (↔) allows you to change between the 2 modes:</p> <ul style="list-style-type: none"> - Motor mode : The cylinder stroke is present and functional You will hear a long beep and the led (—) will be fixed. - Mode single flashing light: We can then connect an additional beacon on the engine output "+". The engine output "-" is also activate with the auxiliary key (AUX), but closes with activation of the arrow. You will hear a triple beep and the LED (←) will be fixed. - (AUX) Key : Exit the programming mode <p><u>Default configuration :</u></p> <p>By default, the motor mode is programmed.</p>

BATTERY

Low battery warning is present to give an alarm or disable the keyboard when the battery voltage drops below a certain limit. The level limit is programmable.

FUNCTION	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Low battery warning	Press & Hold Key AUX	Sets the level of the low battery alarm. <u>Programming :</u> In programming mode, you will see the LED of the selected mode remains lit while other flash. Then select the voltage of the low battery alarm:: <ul style="list-style-type: none"> • Key (←) : 10.5v • Key (—) : 11v • Key (↔) : 11.5v • Key (AUX) : Exit the programming mode <u>Default configuration :</u> By default, low battery alarm is set to 10.5V.

Arrow Management

This menu grouped the different possible programming affecting the arrow.

FUNCTION	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Flashing arrow speed	Press & Hold Key (←)	<p>Allows programming the desired speed flashing. The (↔) and (-) flash together to indicate the speed of flashing arrow.</p> <p><u>Programming :</u> Once in the programming menu :</p> <ul style="list-style-type: none"> • Key (←) : Decrement the flash rate • Key (→) : Increment the flash rate • Key (AUX) : Exit the programming menu <p><u>Default configuration :</u> The default delay is 2 secondes.</p>
The intensity of the flashing arrow in night mode	Press & Hold Key (↔)	<p>Allows programming of the desired intensity of the boom in night mode. Note that the controller has built-in photocell enables it to monitor nighttime operation of the arrow.</p> <p>If your arrow already has an integrated photocell, set the maximum power (100%).</p> <p>The value is programmable from 0% to 100% in increments of 5%.</p> <p>The (↔) and (-) indicate the power of lighting.</p> <p><u>Programming :</u> Once in the programming menu :</p> <ul style="list-style-type: none"> • Key (←) : Decrement the flash intensity • Key (→) : Increment the flash intensity • Key (AUX) : Exit the programming menu <p><u>Default configuration :</u> By default the power is set to maximum (100%).</p>

Miscellaneous

Ce menu regroupe les autres programmations possibles.

FUNCTION	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Operating conditions of the keyboard	Press & Hold Keys (↔) and (—)	<p>Allows programming of keypad operation with and without ignition (input) or if the engine is running or is turned off (battery voltage).</p> <p>Also allows the programming of the ignition recognition mode.</p> <p>Once a key is pressed, the LED on the button will remain active to indicate your choice.</p> <p><u>Programming :</u></p> <p>Once in the programming menu, select the operating mode of the keyboard:</p> <ul style="list-style-type: none"> • Key (←): Keyboard is functional without ignition • Key (↔): Keyboard is deactivated without ignition <p><i>Choose the ignition signal source:</i></p> <ul style="list-style-type: none"> • Key (—): The ignition comes from the ignition input (Pos 12). • Key (→): The ignition comes from the supply voltage level (functional when the engine is running) (>13.1V = ON) (<12.9V = OFF) • Key (AUX) : Exit the programming menu <p><u>Default configuration :</u></p> <p>By default the keyboard is functional without ignition.</p> <p>By default the ignition comes from the ignition input.</p>

FUNCTION	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Management of the vehicle speed	Press & Hold Key (→)	<p>Allows you to program the different configurations for the vehicle speed to the automatic closure of the arrow.</p> <p>Note: Even if the buttons do not disable, the arrow will be deactivated in high speed.</p> <p>Note: You must connect the ignition or program the ignition by the battery voltage for this mode to work.</p> <p>Programming :</p> <p>In the programming menu :</p> <ul style="list-style-type: none"> • Key (←) : Press this key to deactivate the keys in high speed <ul style="list-style-type: none"> ○ Blink if they arrow keys will be deactivated in high speed ○ Constant ON if the keys will NOT be deactivated in high speed • Key (↔) : Press to choose the speed acquisition method <ul style="list-style-type: none"> ○ Standard VSS mode: Led (↔) OFF ○ Sensitive VSS mode: Led (↔) Blink ○ CAN : Led (↔) ON • Key (—) : Programming the speed at 30 km/h (CAN mode only) and exit the speed programming menu. • Key (→) : Programming the speed at 60 km/h (CAN mode only) and exit the speed programming menu. • Key (AUX) : Programming the speed at the actual moving speed and exit the speed programming menu (Works independently of the speed acquisition method). • Note: You must re-record the speed if you change the acquisition method. <p>Default configuration :</p> <p>By default, the speed is acquired by CAN. There is no default programmed speed.</p> <p>The keys are not disable in high speed by default.</p> <p>IMPORTANT : <i>The vehicle's IGNITION signal must be connected to the IGNITION input for proper operation of VSS mode, even if the module is programmed to operate without ignition.</i></p>
Photocell	<i>Please contact technical service to acces this menu</i>	<p>Calibration of the integrated photocell for night mode on the CTRL-FL1^{MC} module.</p> <p>Programming :</p> <p>The current light level will be consider as the edge between light day mode and night mode.</p> <p>Default configuration :</p> <p>By default, the photocell is calibrated</p>

PROGRAMMING

Advanced parameters

(Note: Some programming in this menu could damage your CTRL-FLI^{MC} module)

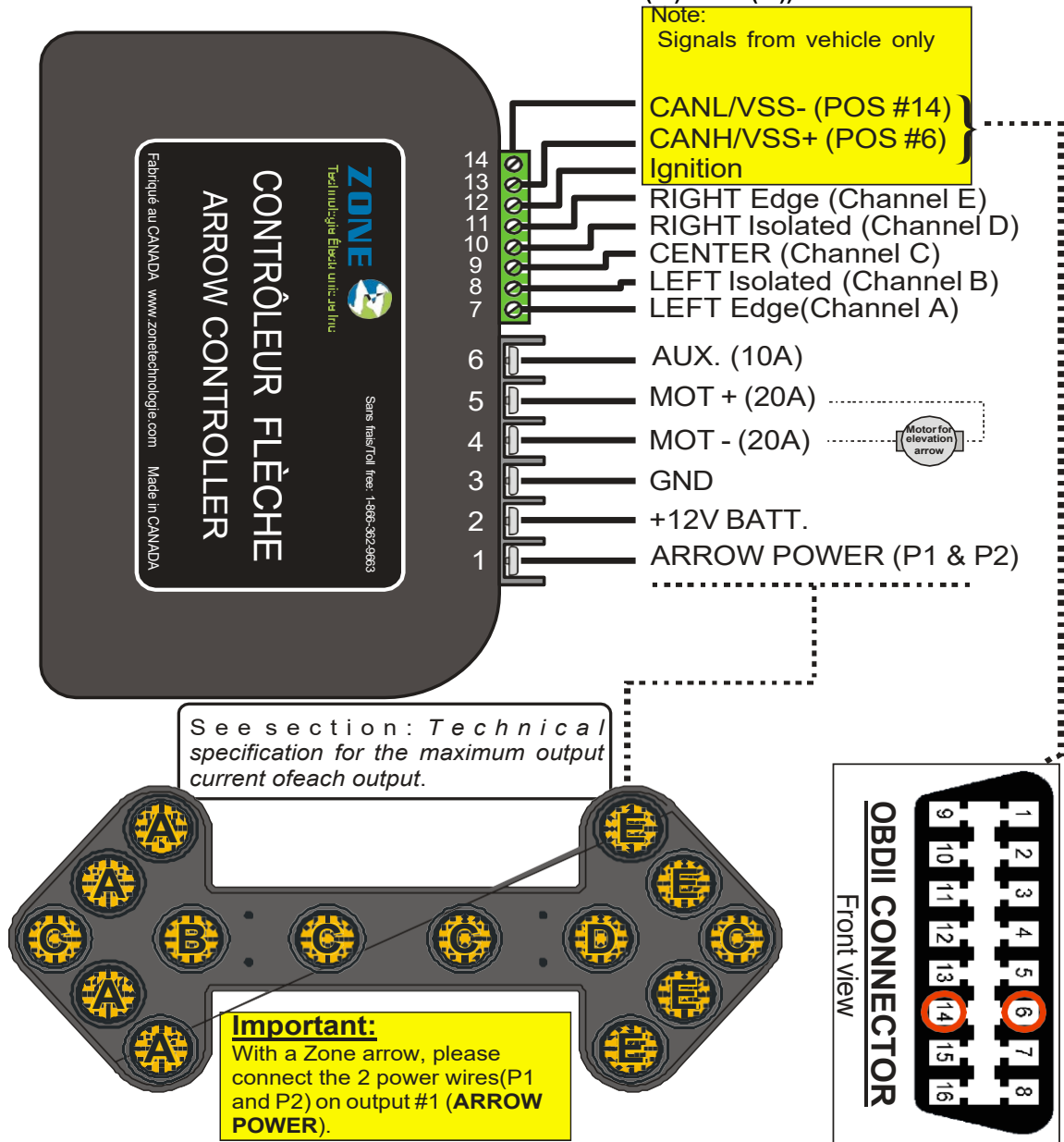
Mode reserved to technical service expert only

FUNCTION	Prog. Menu (Keys to press)	DESCRIPTION AND POSSIBLE DATA
Programming menu for Advanced Settings (Note : Some programming in this menu can damage your CTRL-FLI ^{MC})	Press & Hold Keys (→) and (AUX)	Allows programming of some advanced parameters for the technical service. Once in this mode you can activate other advanced programming. <u>Programming :</u> Once in the programming menu, select a program or holding the button(s) key(s) for at least 2 seconds. <ul style="list-style-type: none">• Keys (←) and (AUX): Reset all to default configuration.• Key (AUX): Exit programming menu

WIRING DIAGRAM

STANDARD CONNECTION

(MOTOR MODE WITH ACTIVATED ARROW: SEE PROGRAMMING (←) AND (→))

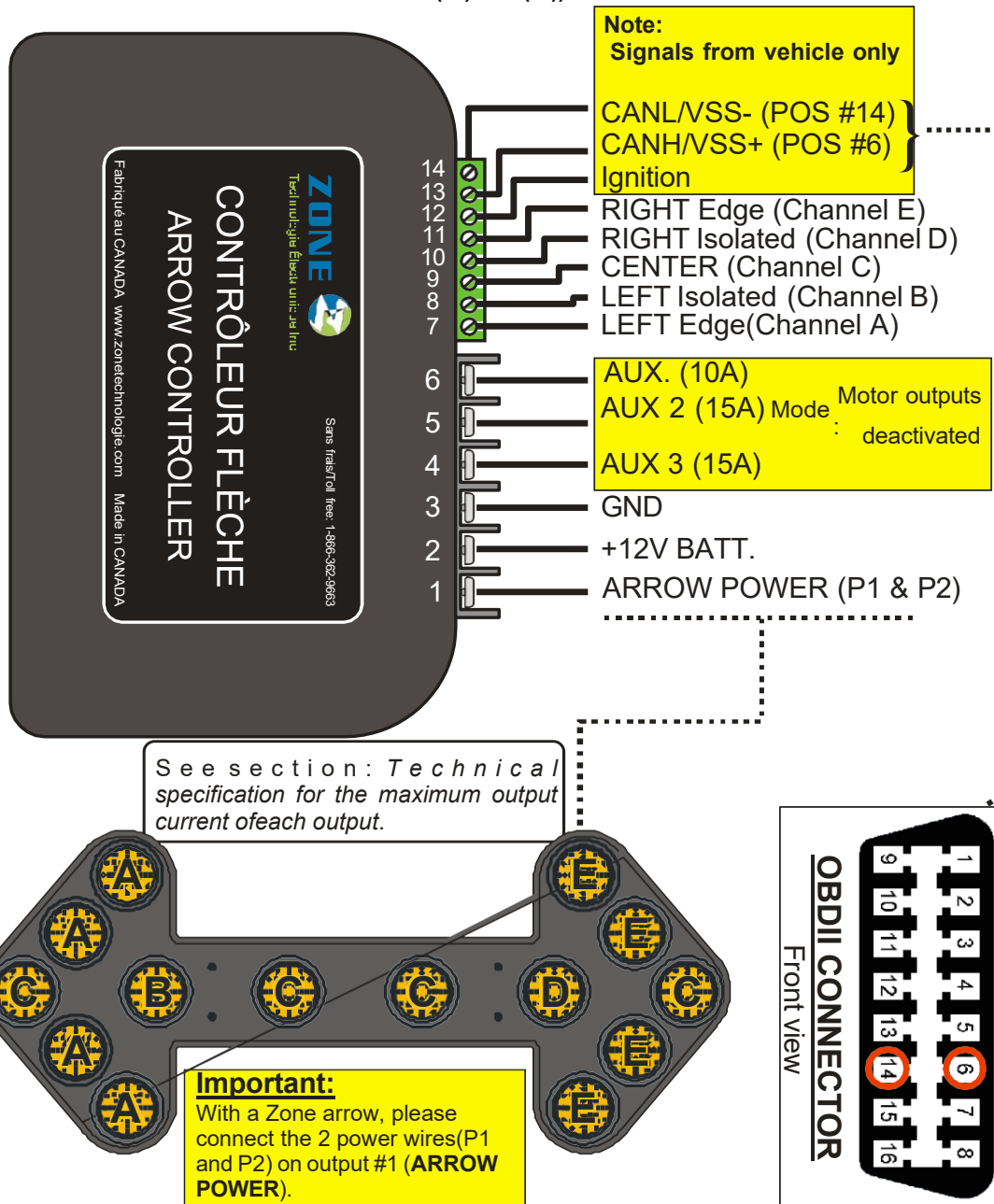


CONNECTION TABLE

	CHANNEL	WIRE COLOR
<p>For Zone signalisation arrow (models : FL1 et FL2)</p> <p>Harness color : Black</p>	A	Black
	B	Green
	C	White
	D	Orange
	E	Blue
	P1	Red (Left)
	P2	White/Black (Right)

AUXILIAIRES CONNECTIONS

(FOR A DEACTIVATED MOTOR : PROGRAMMING (←) ET (→))



CONNECTION TABLE

For Zone signalisation arrow (models : FL1 et FL2) Harness color : Black	CHANNEL	WIRE COLOR
	A	Black
	B	Green
	C	White
	D	Orange
	E	Blue
	P1	Red (Left)
	P2	White/Black (Right)

Limited warranty

Zone Technologie Électronique Inc. guarantees every component that it produces for a period of 24 months starting on the date of the purchase or of the delivery. The products of Zone Technologie Électronique Inc are verified, inspected and recognize as exempt of any fabrication default.

If a product is found to be defective during the warranty period of 24 months, the product will be repaired or replace at the workshop of the Zone Technologie Électronique Inc. society.

All installation, using or modification of the Zone Technologie Électronique Inc. products which is not recommended by the manufacturer leads to a voiding of the actual warranty.

Zone Technologie Électronique Inc. can't be held liable for the damages or charges that arise because of misuse, a careless maneuver or any others attempts to repair or for any reparations made by a third party. No other warranty, written or verbal, than the one from Zone Technologie Électronique Inc. will be recognized.

Zone Technologie Électronique Inc also has the right to repair or replace any defective product to its sole discretion. Zone Technologie Électronique Inc can't be held liable for the charges that arise during the installation or the removal of a product that requires maintenance and/or repairing.

It is expressly specified that we shall be committed by no other warranty (express or tacit) of intrinsic quality, marketable quality or capacity in a particular use.

For any information, please don't hesitate to communicate with us.
Phone number: 450-572-1476 • 1-866-362-9663 • Fax: 450-572-0898

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