

PRODUCT INFORMATION

PRE-START WARNING TIMER 12/24V

Part No. 12539




Operation and Use

When the start switch on the machine is activated, the audible alarm will sound and the timer is activated. After the pre-start time period has elapsed, the controller will supply a positive output to the start solenoid and start/crank the machine.

The time period is determined by connecting a selection of inputs (from the 12-pin connector) to ground. If no inputs are connected, the pre-set minimum warning time will be used (four seconds, by default).

Controller Status Indicator Operation

State	Indicator Sequence
Battery Power-up	<ul style="list-style-type: none"> All indicators will turn on. All indicators will turn off. After power-up, the controller will revert to normal operation.
Status Indicator in Operation	<p>RED – Fault.</p> <ul style="list-style-type: none"> If outputs have problems, this will turn on. Outputs 1 & 2 – high current outputs: checked for over current. Output 3 – not checked as it is a low side driver. Output 4 – checked for correct output voltage. Temperature – checked for board temperature exceeding 80 °C. <p>YELLOW – Pulses during normal operation, indicates system OK.</p> <ul style="list-style-type: none"> Flashes on and off at one-second intervals (on for one second, off for one second). <p>GREEN – On for normal operation.</p>

	Alarm Indication
	System Status
	Power Indication

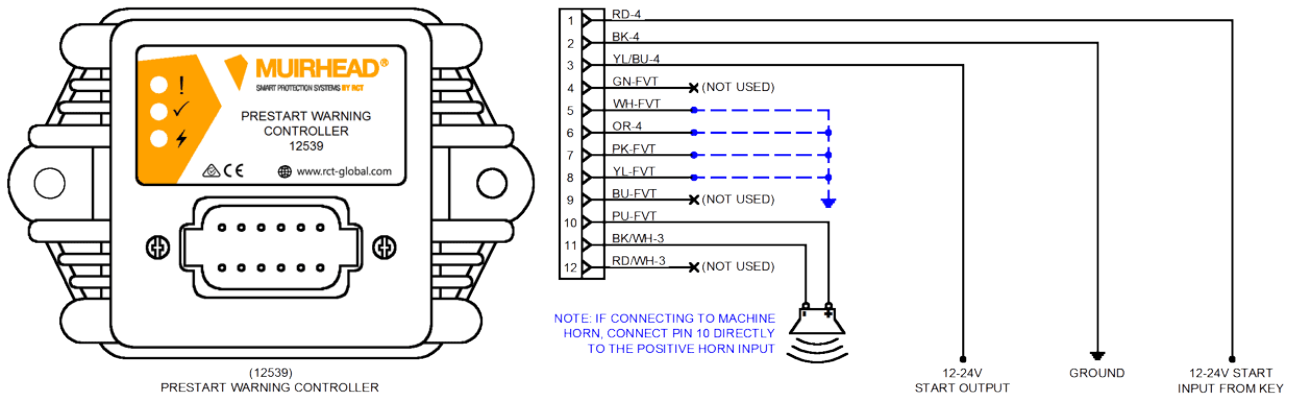
Installation Guide

1. Install the controller in a suitable location.
2. Refer to the following wiring connections table and external wiring diagram to connect the controller. It is recommended that the wiring is installed alongside the OEM wiring ensuring that it is secured at regular intervals; this will provide protection from heat and abrasion, and any other excess damage that may occur with extended vehicle operation. When securing the wiring to the OEM wiring, ensure that the loom is away from moving vehicle parts which could lead to loom damage.
3. If using the 6162 alarm, ensure to mount it in a suitable location inside the machine cabin. If using the machine OEM horn, connect the purple wire (pin 10) to the positive side of the OEM horn.
4. Remove the start output wire (engine crank) from the ignition key switch and connect it to the yellow/blue wire (pin 3).
5. Connect the red wire (pin 1) to the engine start (crank) terminal previously occupied by the wire removed in step 4.

Wiring Connections

No.	Colour	Function	Description
1	Red	Start Input	Start input from key switch (12 - 24 V)
2	Black	Ground	Ground 0 V
3	Yellow/Blue	Output 1	Start output (12 - 24 V)
4	Green	Output 3	Not used
5	White	Input 1	Connect to GND to increase prestart time by 2 seconds
6	Orange	Input 3	Connect to GND to increase prestart time by 8 seconds
7	Pink	Input 4	Connect to GND to increase prestart time by 16 seconds
8	Yellow	Input 2	Connect to GND to increase prestart time by 4 seconds
9	Blue	Output 4	Not used
10	Purple	Output 2	Alarm +ve (12 - 24 V)
11	Black/White	Alarm -ve	Alarm -ve (12 - 24 V)
12	Red/White	Battery supply	Not used

External Wiring Diagram (512a)



Calibration

The alarm period for the prestart warning timer is configured by connecting a selection of inputs to GND at installation. Each input connected adds a set number of seconds to the default prestart warning time of 4 seconds. For example, if inputs 1 and 4 are connected to GND and inputs 2 and 3 are not connected, the total prestart warning time would be $4+2+16 = 22$ seconds.

	Input 1	Input 2	Input 3	Input 4	GND
4 seconds					●
6 seconds	●				●
8 seconds		●			●
10 seconds	●	●			●
12 seconds			●		●
14 seconds	●		●		●
16 seconds		●	●		●
18 seconds	●	●	●		●
20 seconds				●	●
22 seconds	●			●	●
24 seconds		●		●	●
26 seconds	●	●		●	●
28 seconds			●	●	●
30 seconds	●		●	●	●
32 seconds		●	●	●	●
34 seconds	●	●	●	●	●

Note: The table above should only be used as a reference if the unit is set to the factory defaults.

For detailed product information, please contact your local RCT branch for a copy of the product manual [M0937](#). For advanced programming of the product, please contact your local RCT branch to purchase the Muirhead® Programming Utility, part number 13647.

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