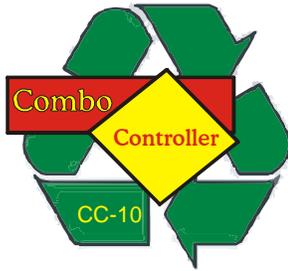




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## CybaSMART ComboController – Cat III

*(for COMBO Units that share the main balers' hydraulic power pack ONLY)*

### Specifications:

Power Supply	24Vac derived from main controller
Supply Protection	Fused on PCB
Hydraulic valves	2 x poppet types – 24Vdc 14.6W coils
Front Panel	1 x operate button & 1 x Emerg. Stop
Indicators	1 x Power LED , 1 x Full Bale LED 2 x Door LEDs
Inputs	1 x Travel Switch & 1 x Door Switch
Door Protection	AS4024.1 Category 3

### Function:

The controller is designed to draw 24Vac power from the main CybaSMART controller. This saves on the cost of a separate power supply and key switch. This unit is also designed to share the same hydraulic power pack with the main baler, to further reduce machine cost. It is not advisable to run both balers simultaneously as this has detrimental effects on hydraulic operation, so a communication system exists between the Combo Controller and the CybaSMART controller on the main baler. When the Combo baler is operating –CC- is displayed on the CybaSMART controller and the main baler can not be operated. Conversely, when the main baler is operating the Combo baler can not be made to operate.

A door switch is monitored to AS4024 Cat3 and the hydraulic valves are de-energised when the door is opened. Both door LEDs will be illuminated when the door is open. When the door is shut Door(S) then Door(M) LEDs will go out in that order.

The pressing plate is stopped at either end of its travel when a travel limit switch is made. The travel switch will be ignored for the first two seconds after a hydraulic valve is enegised to allow one switch to be used to sense both ends of the travel. Further a timer will be started at the beginning of the down

stroke and if the travel switch is not made in a given time then the down stroke is terminated and the full bale LED is switched on.

Also the retract stroke is timed, and if the travel switch does not operate within a given time the controller will stop. This protects the hydraulic systems from continually bypassing if the travel switch fails and the machine is unattended.

## **Operation**

- 1) When power is initially switched on the power LED should illuminate. Ensure the baler doors are shut, and the main baler is not operating.
- 2) After power on pressing the Operate button will cause the machine to retract and stop in the retracted position.
- 3) Pressing the Operate button again will cause the baler to cycle down to the bottom of its stroke, then cycle back up to the retracted position.
- 4) When the baler cycles down and the bale is full it will stop in the down position and the Full LED will illuminate. When the Operate button is pressed the baler will retract

## **Hydraulic Valve Coils**

The ComboController is only designed to drive low power solenoid coils. 24Vdc units with a power rating of less than 16W maximum should be used.

## **Door Switch**

The door switch system is a category 3 safety system as described by AS4024.1. No substitution of parts or modifications should be made to the door switch system, as these are safety critical parts.

## **Travel Switch**

The travel switch must have its contacts shut at the ends of the cylinder stroke. The Combo controller does not monitor the travel switch for the first two seconds after a valve coil is energized. This allows one switch to be used to monitor both ends of the cylinder stroke.

## **Fuses**

There is also a 1amp fast blow fuse on the PCB protecting the 24Vac circuit. Always replace with a correctly rated fuse for continued protection.

## Some Known Fault Symptoms

1) A travel switch malfunctioning can have two possible symptoms:

- a) If the switch is jammed closed then the controller will drive the hydraulic solenoids for only two seconds in either direction.
- b) If the switch is permanently open then on the down stroke the unit will always show full bale. However it is probable that the down stroke is not possible. The likely outcome is the unit going into retract for about 20 seconds then stopping. When the Operate button is again pressed the controller will still retract, run for 20 seconds then stop. It will not be possible to get the machine to cycle. This happens because the safety time out occurs when no travel switch signal is detected and forces the controller into its power on mode. The next function when the Operate button is pressed is retract, and it is not possible to get past this condition because the controller keeps getting forced back to the power on mode.

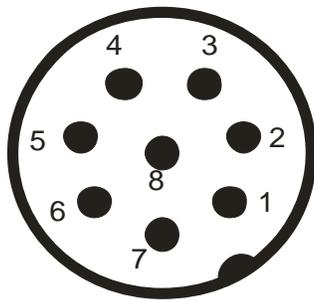
2) Incorrectly placed travel switch strikers can allow the pressing plate to travel too far below the bottom position striker. The baler can then get into a state where it retracts 2-3cm and stops. When the Operate button is pressed it then extends to the bottom of stroke then retracts 2-3cm and stops again. One option to correct this is to switch off controller and remove the wire from the travel switch then switch on and retract pressing plate to fully up position. Switch off controller and re-fit travel switch wires. Baler should now function correctly. If the problem is persistent then contact Autobaler for details on re-positioning travel switch striker.

3) No power could be caused by:

- a. A blown 1 amp fuse
- b. The main CybaSMART controller not being powered
- c. A failed contact block on the ComboController Emergency Stop
- d. A short in the solenoid valve wiring. Also check if the Hirshmann plug on the solenoid has diodes fitted and ensure the correct voltage polarity is applied.
- e. The options plug on the bottom of the CybaSMART controller is disconnected or the wiring is broken
- f. A failed ComboController PCB. ALWAYS check and eliminate all of the above before replacing the Combo PCB.

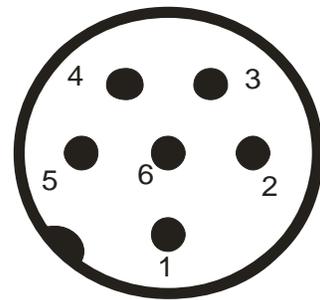
## Combo-Controller Connector Pin-Out

Main Connector



- 1: Door Switch Common
- 2: Valve Coil Ground
- 3: Down Valve Coil
- 4: Up Valve Coil
- 5: Travel Switch
- 6: Door Switch A
- 7: Door Switch B
- 8: Travel Switch Ground

Link Connector

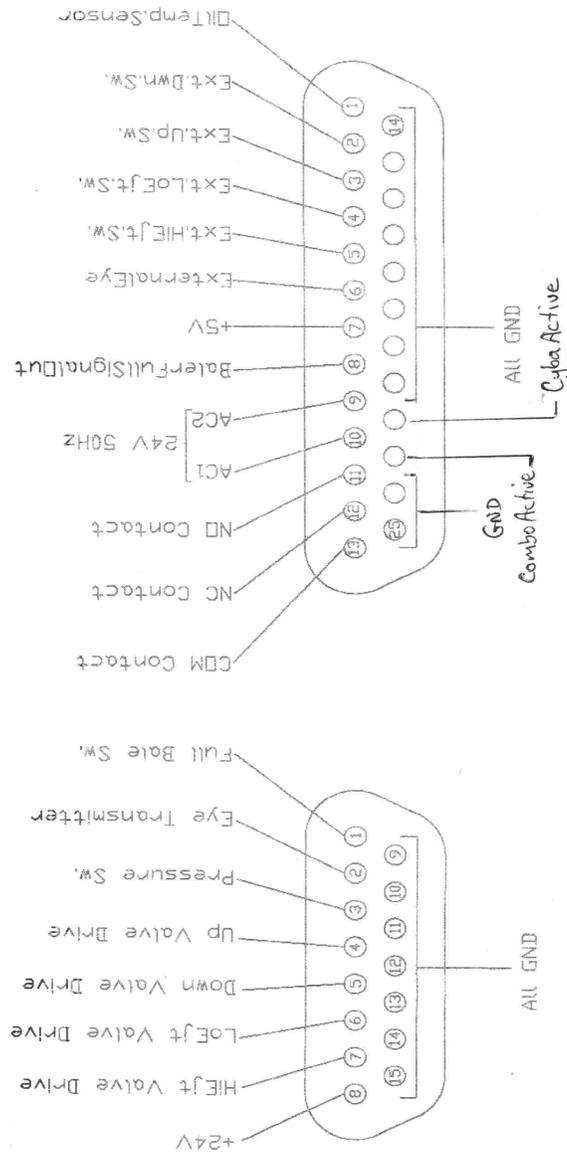


- 1: Combo Active
- 2: AC2 Supply
- 3: AC1 Supply
- 4: Ground
- 5: Cyba Active
- 6: Ground

Connectors Viewed from Bottom of Controller.

PIN-OUT MODIFICATION FOR COMBO CONTROLLERS

DESIGNATED BY CODE SERIAL NUMBERS ENDING IN C.



**CybaSMART Connector Pin-Out**

(Viewed from the bottom of the controller)

**Note:** this model of Combo Controller is only fully compatible with CybaSMART PCB modules with Code Revision numbers ending in C.  
For example:

CybaCODE Rev: 5.1C

## Spare Parts List

<u>Description</u>	<u>Part Code</u>
Combo PCB Unit	SL-X-ComboControllerPCB
Combo Main Harness Wiring	SL-X-ComboMainHarness
Combo Link Harness Wiring	SL-X-ComboLinkHarness
Emergency Stop Switch	SL-A-LEB22R
Green Button	SL-A-PBF22G
1 amp 20mm glass fuse	SL-S-CEB1
Magnetic Door Switch	SL-A-F35-TGR-NSPR-21-05
Travel Switch	SL-A-NAZD1004

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### **WARRANTY**

Your StarLogixs ComboController is guaranteed against faulty workmanship or components for a period of twelve months after the purchase date. For warranty contact your local sales agent with proof of purchase date.

This warranty does not cover damage or failure cause by or attributable to Acts of God, abuse, misuse, improper maintenance, lightning or other incidence of excessive voltage or any repairs other than those provided by an authorised StarLogixs service facility, or transportation costs.

StarLogixs is not responsible or liable for indirect, special, or consequential damages arising out of or in connection with the use or performance of the Controller or other damages with respect to any economic loss, loss of property, loss of revenues or profit, or cost of removal, installation or reinstallation.

There will be charges rendered for repairs to the product made after the expiration of the aforesaid twelve month warranty period.

- This warranty gives you specific legal rights and you may have other rights which vary from state to state.