



CybaSMART
OPERATORS MANUAL

A large, bold, black outline of a five-pointed star is positioned to the right of the "OPERATORS MANUAL" text, partially overlapping the "T" in "SMART".

ELECTRONIC CONTROL SYSTEM FOR
AUTOBALER

FULL SERVICE DATA AVAILABLE AT: www.starlogixs.com.au

IMPORTANT SAFETY NOTICE



- Your StarLogixs CybaSMART Controller provides vital safety features in your baler. If the Controller has been damaged always have it checked by a person qualified for electrical maintenance before operating the baler.
- Check all power leads and plugs for damage. If damage is found switch off and disconnect from supply, and have repaired by a person qualified for electrical maintenance.
- The 'door closed' sensors are critical to the safe operation of the baler. If they are damaged or the mechanism driving them is damaged never attempt to use the baler before calling an approved service agent.

The Controller has lethal voltages inside.

- **NEVER OPEN OR ATTEMPT TO SERVICE.**
- **NEVER REMOVE OR ATTEMPT TO REMOVE THE BACK COVER.**
- **NO USER SERVICEABLE PARTS OR ADJUSTMENTS INSIDE.**
- **DO NOT DIRECTLY EXPOSE CONTROLLER TO RAIN OR HIGH PRESSURE WATER JETS.**
- **SHOULD YOU LEAVE YOUR AUTOBALER UNATTENDED FOR A PERIOD OF TIME, IT IS STRONGLY RECOMMENDED THAT YOU SWITCH THE POWER OFF AND REMOVE THE KEY.**
- **ANY UN-AUTHORISED ACCESS INTO THE CONTROLLER WILL VOID WARRANTY.**

Note to Serviceman

Always obtain the latest version of service manual from www.starlogixs.com.au (phone for password) before attempting to service the control system. Do not substitute items noted in the service manual as critical components in the category III safety systems.

1.0 Declaration of Conformity

The CybaSMART ® Controller is designed to control AutoBaler® baling presses and conforms with the following standards:

AS/NZS20641:1997
(EC/CISPR11:1992)
AS4024.1:1996
(Category III)



And is manufactured under Australian Communications Authority
C-Tick approval number:

Also safety door switches comply to:

EN954-1
EN/IEC60204-1
EN/IEC60947-5-3
UL508, CSA C22.2 No. 14
EN1088 conformance

And the safety monitoring relays comply to: EN50205.

M A C H I N E M O D E L : _____

SERIAL NUMBER: _____

Conforms to the above mentioned standards.

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2.0 Suggested Conditions of Use

2.1 Qualified Operators

Operator:

Qualified to operate the control unit in all normal day to day functions of the baler.

Person Qualified for Electrical Maintenance

Must be trained by the manufacturer or hold appropriate trade qualifications for the service of mains electrical equipment and safety related electronic equipment.

Safety Manager:

The Safety Manager is the person in charge, liable for protection and prevention from working risks. The safety manager will make sure that all persons operating with the machine receives all instructions concerning their jobs, as herewith contained, including and beginning from installation and machine starting.

Manufacturer:

It is necessary to contact StarLogixs for any operation not expressly covered in the present manual and assigned to any of the professionally qualified operators as listed above.

2.2 Description of the Controller

The CybaSMART® Controller is an electronic industrial control system purpose designed to control and automate AUTOBALER® cardboard baling machines. In particular the controller functions provides all the sensing and monitoring functions of the Category III safety system, and must be serviced and maintained in accordance with the recommendations in the service manual.

Also the controller houses mains voltages and should only be serviced by qualified persons. It should be maintained in accordance with relevant electrical safety standards.

2.3 Situation of Normality

It is absolutely necessary that the controller is used in the conditions suggested by the present manual of use and maintenance. It is not allowed to misuse the controller or its safety devices nor to use the machine in abnormal conditions.

We wish to point out below some suggestions, to be carefully considered by the operator in order to avoid abnormal conditions of use.

- Do not operate the controller if it is not properly attached to the baler.
- Do not operate the controller if door sensors, emergency stops or other electrical components are damaged, or not functioning.
- It is strictly prohibited that persons other than the operator approach the machine.
- The controller shall not be installed and shall not operate in an explosive environment.
- The controller shall never be washed with jets of water or flammable liquids.
- Cleaning and maintenance operations shall be performed by qualified persons.
- The operator shall always perform periodical safety checks, as required by safety rules.
- The controller should be protected from direct exposure to rain and sunlight.

2.4 Protection

Emergency Stop- immediately stops machine operation by disconnecting power supply in the controller, and also interrupting the door switch sensor connection.

Door Sensor- immediately holds all automatic operations and movement of the pressing fingers and stops the baler electric motor, when the door is opened or the emergency bar is pressed.

3.0 Installation - Qualified Person : Safety Manager

Before proceeding with the preparation of the machine for its installation and starting it is necessary to make a careful visual inspection of the controller for any damage that may have occurred in transit. In particular check:

- Door Sensor
- Emergency Stop
- Mains Power Cable
- Mains Plug
- Controller Mounting and Earth Wire

4.0 Getting Started

4.1. Electrical Connection

Ensure that the power socket is correctly rated and is provided with an effective earth before plugging the controller in.

4.2 Control of Protection Devices: Qualified Person: Safety Manager

Check that pressing emergency stop causes controller Power LED to go out and machine to immediately stop. Also check that opening top baler door or pressing the emergency bar causes the Door Open LED to light. The baler pressing fingers should not move when the door is open.

The operator shall not disable or attempt to disable any of the safety features of the controller.

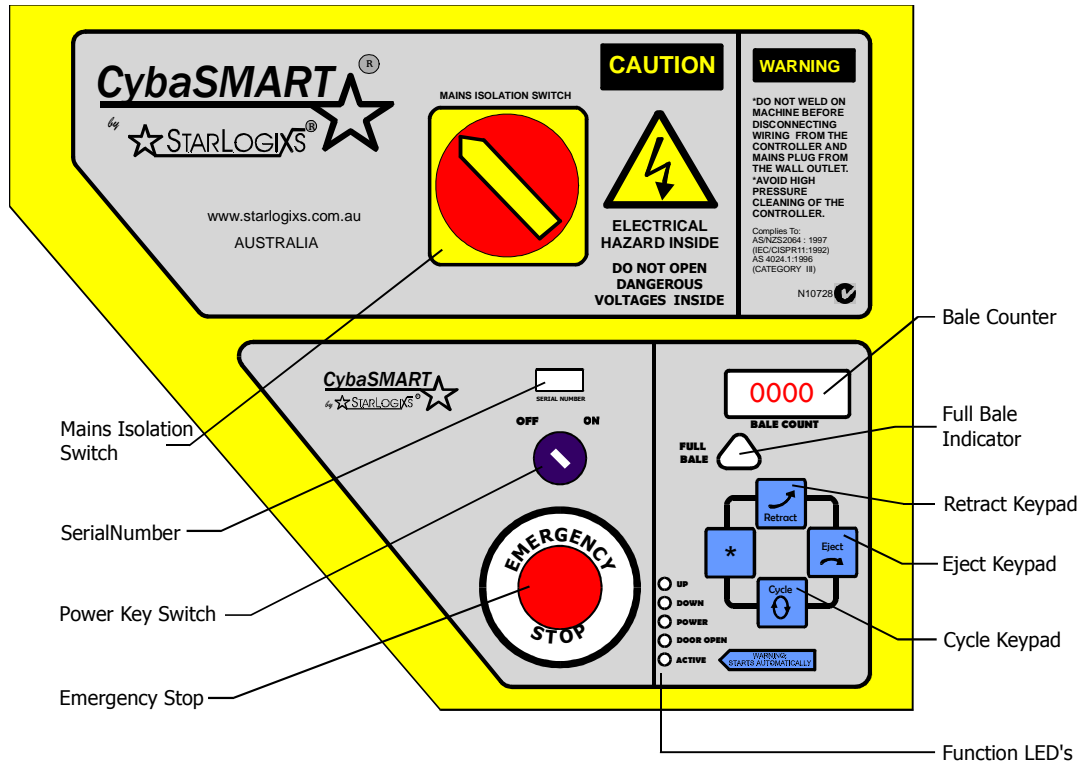
The Person Qualified for Electrical Maintenance shall not open the controller before disconnecting from the mains supply. Maintenance personnel should at all times be in control of the mains plug when working inside the controller.

At the completion of any work they should locate, assemble and check that all safety systems are functioning correctly.

The Safety Manager shall make sure the Operator and Persons Qualified for Electrical Maintenance have received all necessary information according to the present manual and electrical service manuals as maybe appropriate, and in particular will make sure that all safety systems and protection devices are correctly assembled and working and also that they have not been mishandled.

Note: The pressing fingers will not move with the top door open and the eject function will be disabled if the top door is shut.

4.3 Location of Main Features on Controller



4.4 Operation of Controller

1. Ensure Mains Isolation Switch and power outlet is on.
2. Switch on Power Key Switch and rotate the Emergency Stop to release. The power LED should illuminate and the bale counter display should show the bale count.
3. Close the Retract Keypad and hold it for about 0.5 seconds and the UP Led will illuminate, the electric motor will start, and after a 4 second delay the pressing fingers will move upwards to their retracted position and stay there.
4. After filling pressing compartment and hopper with material, press and hold the Cycle Keypad for 0.5 seconds. The ACTIVE Led will commence flashing indicating the baler has entered its automatic mode. The DOWN Led will illuminate and the pressing fingers will move downward compressing material. If the hopper sensor detects material in the baler hopper the machine will automatically cycle until the hopper is cleared. Alternatively the operator can manually initiate another cycle by pressing the Cycle Keypad.
5. The baler will continue to operate automatically until a full bale condition is detected. The last pressing cycle is completed and an audible beeper and Full Bale Indicator are activated. The hopper sensor will stop causing the baler to cycle, but the operator can start further cycles by pressing the Cycle Keypad. This will allow material already in the hopper to be compressed.
6. After tying-off the bale (see baler manual) the top baler door must be shut. Pressing the Retract Keypad (and holding it for 0.5 sec) will cause the UP Led to illuminate and the pressing fingers to move upwards to their retracted position, and stay there. If this does not occur check door is shut properly (DOOR OPEN Led should not be illuminated.)
7. Open top and bottom baler doors and hold Eject Keypad to power eject finished bale (refer to baler manual for details). The bale counter will increment by one each time a bale is ejected. The UP and DOWN Led will illuminate while the EJECT Keypad is pressed.

Note: The pressing fingers will not move with the top door open and the eject function will be disabled if the top door is shut.

4.5 Motor Operation

The CybaSMART Controller intelligently controls the electric motor for maximum energy efficiency. If the baler completes an operation and no new functions are required in the next 16 seconds the motor is stopped.

If the motor has stopped and a press function is required the motor automatically starts, but the baler functions are suspended for 4 seconds allowing the motor to start under no load and stabilise at its running speed.

The Category III safety system in the Controller immediately stops the electric motor when the baler top door is opened.

During Eject operation the motor only runs while the Eject Keypad is pressed.

The CybaSMART Controller has two motor sockets on its lower face. When the motor cable is plugged into one socket the motor will rotate one way and when it is plugged into the other socket the motor rotation direction will be reversed.

SAFETY WARNING

- **ALWAYS SWITCH OFF MAINS ISOLATION SWITCH BEFORE CHANGING THE MOTOR CABLE FROM ONE SOCKET TO THE OTHER.**
- **ALWAYS FIT THE SOCKET CAP TO THE UN-USED MOTOR SOCKET.**

4.6 Overriding the Full Bale Condition

The CybaSMART Controller incorporates a feature that allows the full bale state to be overridden by pressing the Cycle button. This feature allows the operator to "finish off" the bale prior to tying off and ejection.

However, if an operator continues to use this feature to add more material, a dangerous situation can occur. The excess material produces pressure on the top baler door, and when the door is unlatched it can spring open and potentially strike the operator.

CybaSMART Controllers now include a safety feature that only allows the fully bale state to be overridden three times. The first time the controller display will show FUL 1, the FUL 2 and finally FUL 3 on the third time. After this the bale must be ejected to clear this condition. No further cycles can occur when FUL 3 is displayed.

CAUTION:

If the display shows FUL 3 and the Retract button is pressed the baler pressing fingers will retract upwards, but can not be made to travel back downward. The material in the baler will have to be removed without tying off the bale correctly, and will probably have to be repressed.

4.7. Fault Reporting

The CybaSMART Controller can detect some basic system faults and will indicate them on the bale counter using the following codes:

P.S.-0 : pressure switch will not close. This is a primary hydraulic sensor and the baler will not operate correctly if this unit is faulty. Sensor is not serviceable -call your service provider.

P.S.-1 : pressure switch jammed closed. As for P.S.-0.

CYC : excessive cycling. The controller monitors the number of automatically initiated cycles that occur concurrently, and if more than 127 cycles then the controller will stop the baler and exit its automatic mode. Opening the baler top door or switching the power off resets the cycle counter. Pressing the Cycle Keypad will restart the baler.

Most common cause is a faulty hopper sensor. Check the front and back lenses are clean before calling for service.

HOT : hydraulic oil too hot. Some baler models have an oil temperature sensor and an over temperature indication from the sensor produces this warning and forces the baler out of automatic mode.

Side Mesh Guard Switches: On some balers an optional pair of switches are fitted to monitor if the side mesh guards are correctly closed. If they are not properly closed the baler will not operate and the message **OPEN** will appear on the controller display.

4.8 Controller Functionality Check-

Qualified Person: Person Qualified for Electrical Maintenance

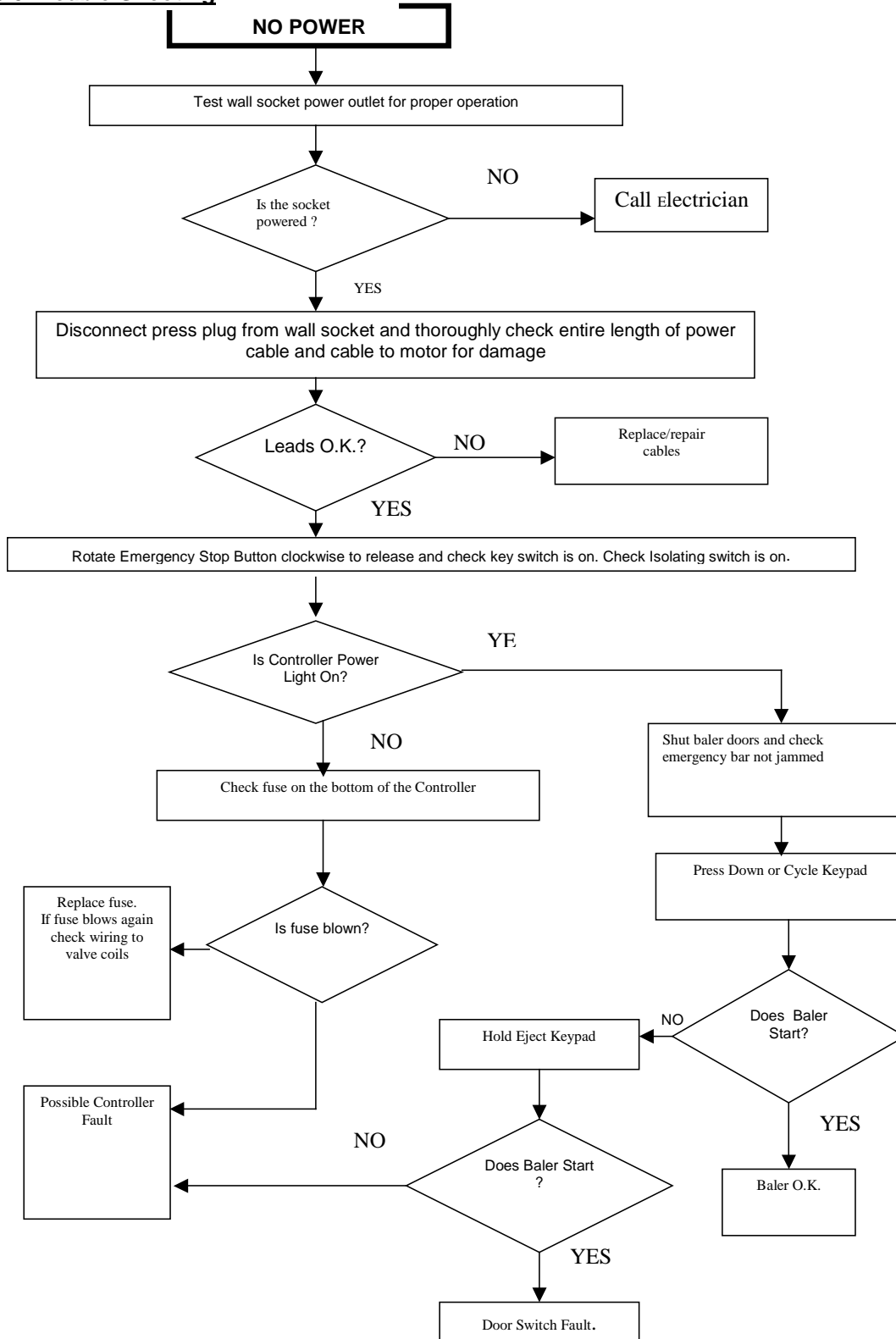
- A) Emergency bar causes the DOOR OPEN Led to illuminate.
- B) With power on and baler door shut pressing and holding the Cycle Keypad for 0.5 seconds should cause the pressing fingers to travel to the bottom of their stroke and stay there if there is no material blocking the hopper sensor. When the pressing fingers reach the end of their travel you should be able to hear the hydraulic system load-up and about 0.5 seconds later the DOWN Led should go out, but the ACTIVE Led should keep blinking. Blocking the beam of hopper sensor should then cause the UP led to illuminate and the pressing fingers to move to their fully UP position where the UP Led goes out and the DOWN Led illuminates and the pressing fingers move back to their down position.
- C) Pressing and holding the Retract Keypad for 0.5 seconds cause the UP Led to illuminate (however the ACTIVE Led should now be off) and the pressing fingers will move to their fully up position. When the fingers reach the limit of their upward travel you should be able to hear the hydraulic system load-up and about 0.5 seconds later the UP Led should go out.
- D) When the baler door is open the DOOR OPEN Led should illuminate and pressing the CYCLE or RETRACT Keypads should have no response and the pressing fingers should not move. The baler electric motor should not run with the door open unless the Eject Keypad is continuously held. Holding the Eject Keypad should cause the UP and Down Leds to illuminate and the power bale ejection system should be energised.

4.9 Fuse Replacement

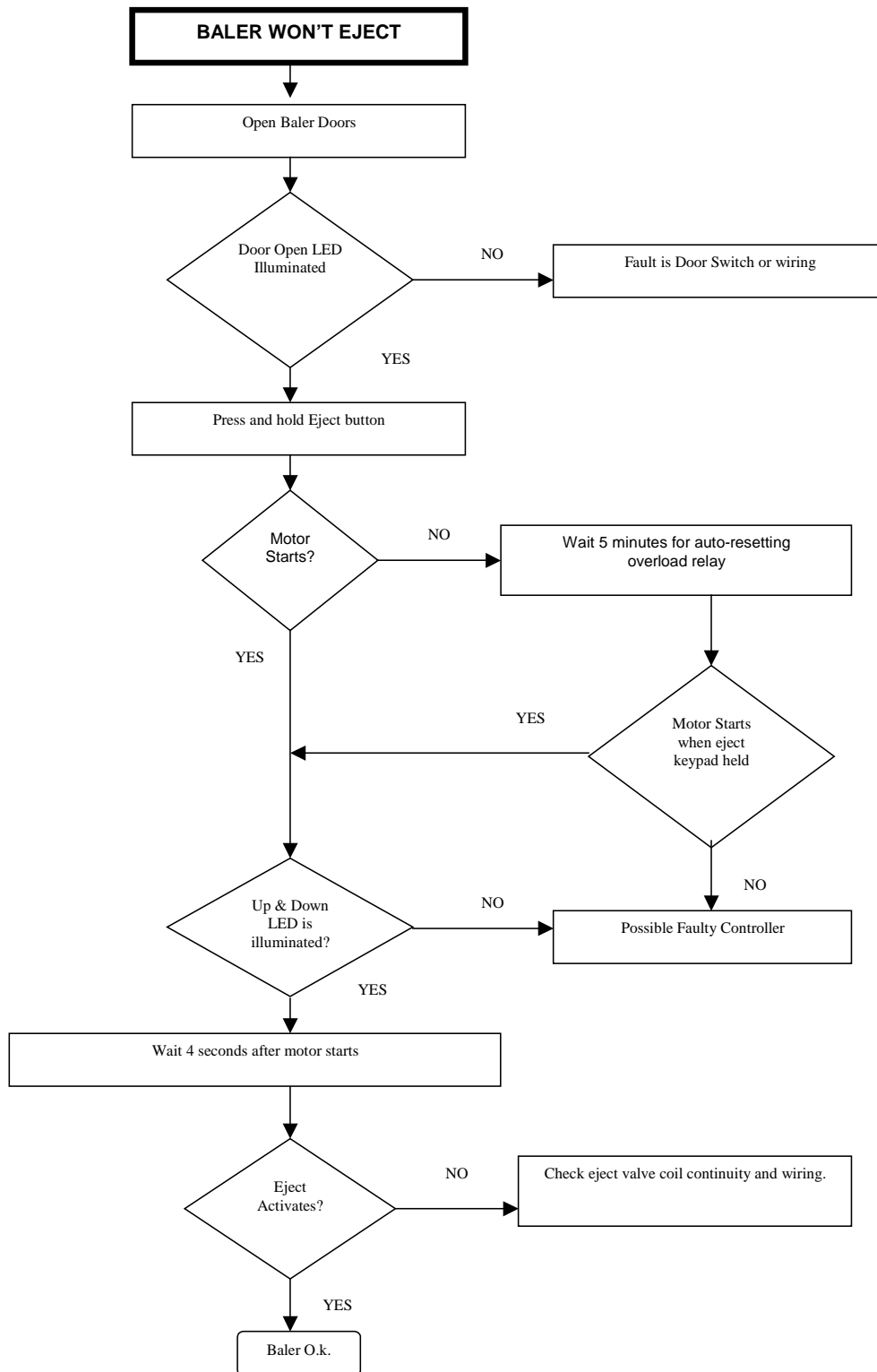
There is a panel fuse located on the bottom of the controller. When the cap is unscrewed a glass fuse is accessible. Always replace this with a 4A Fast Blow 32mm glass fuse. If fuse blows again there is a fault either in the controller or around the baler wiring and the fault must be cleared before again replacing the fuse.

Fitting an incorrectly rated fuse may damage the controller and will void warranty.

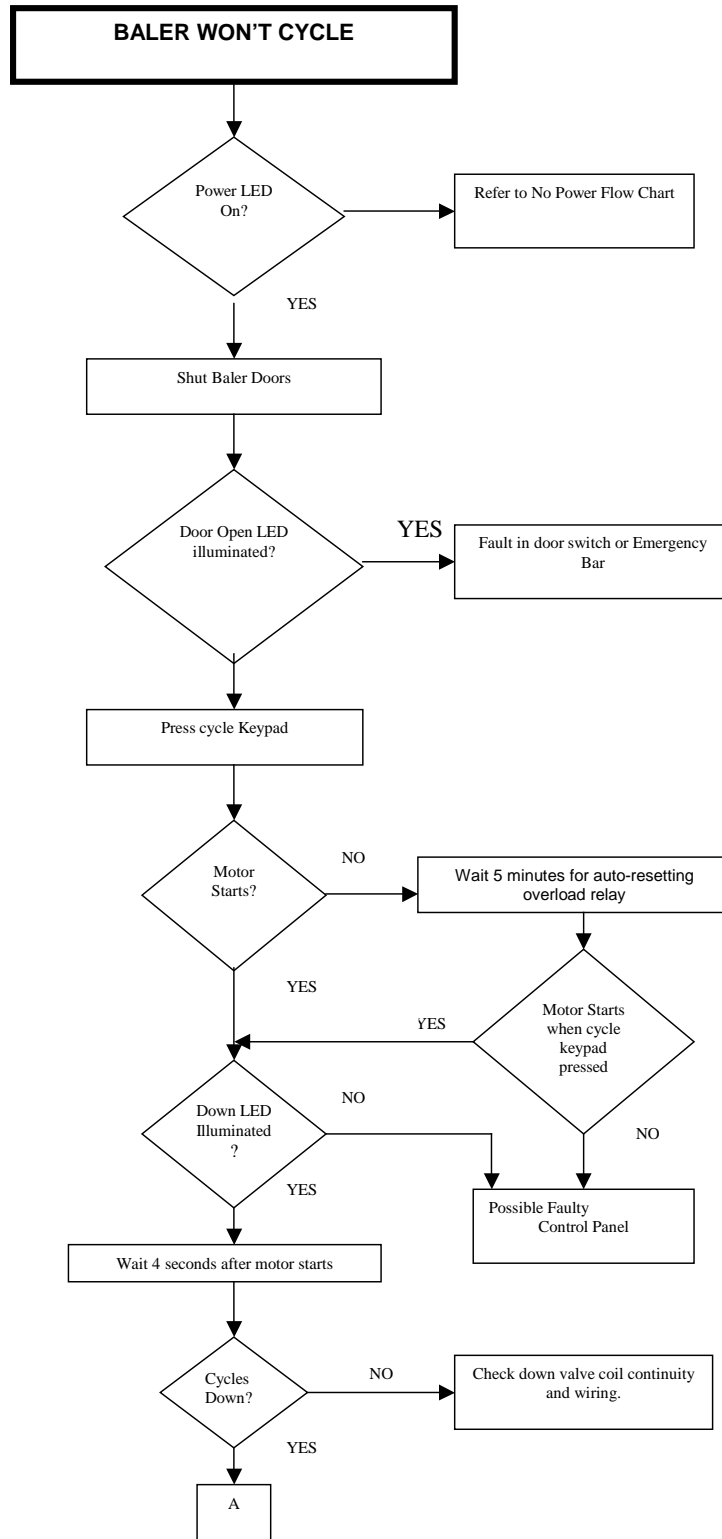
5.0 Trouble-Shooting



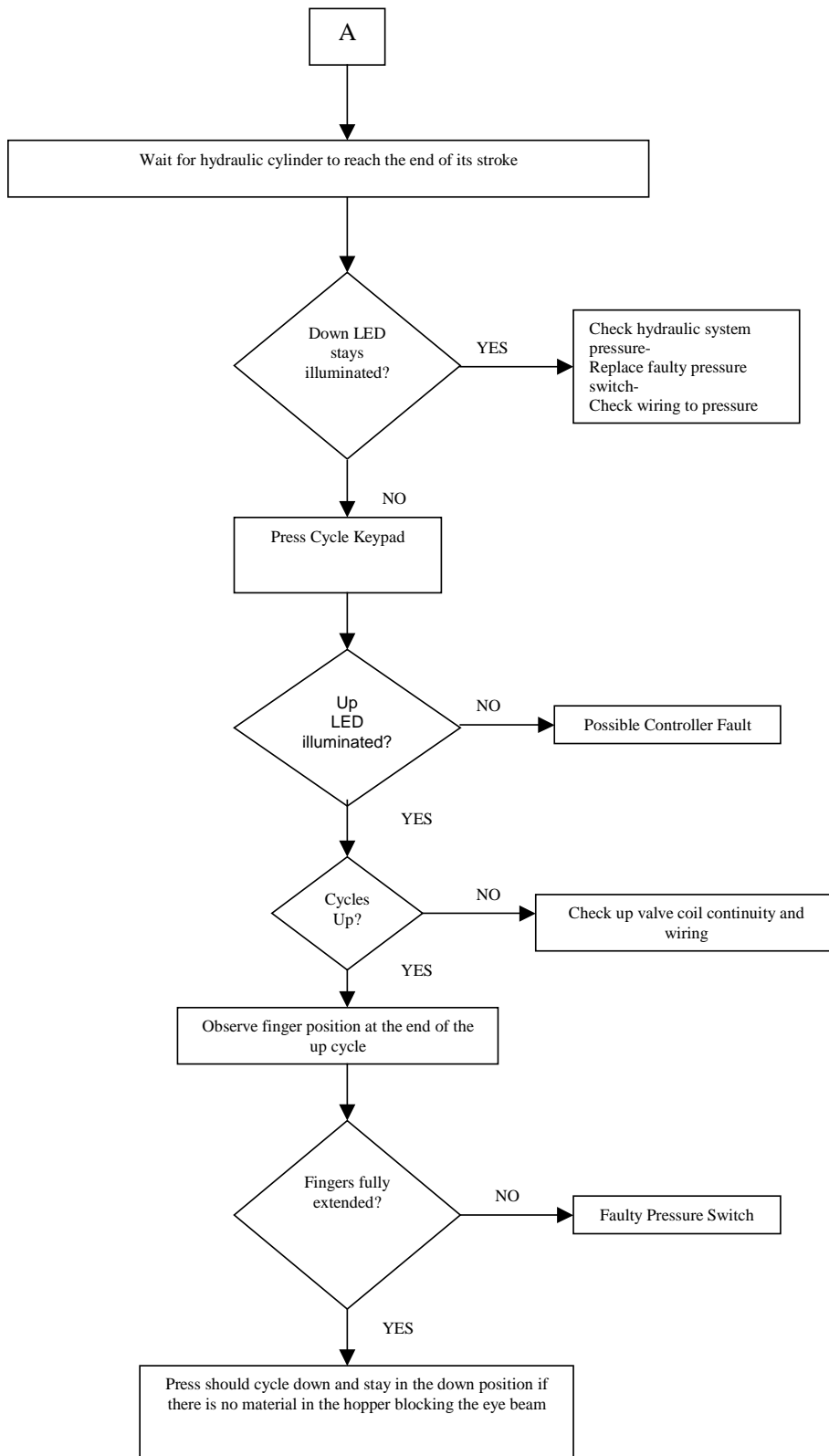
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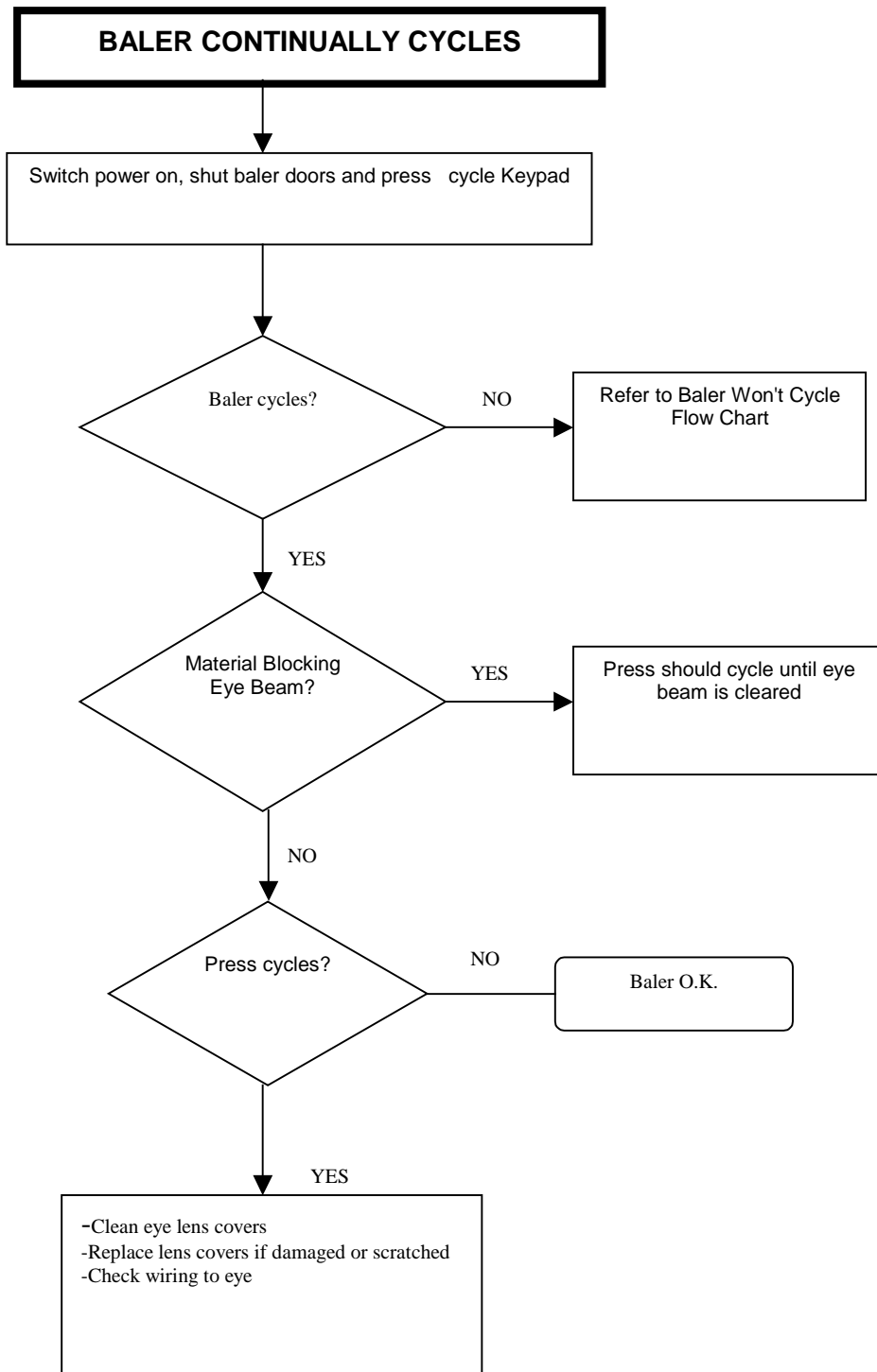
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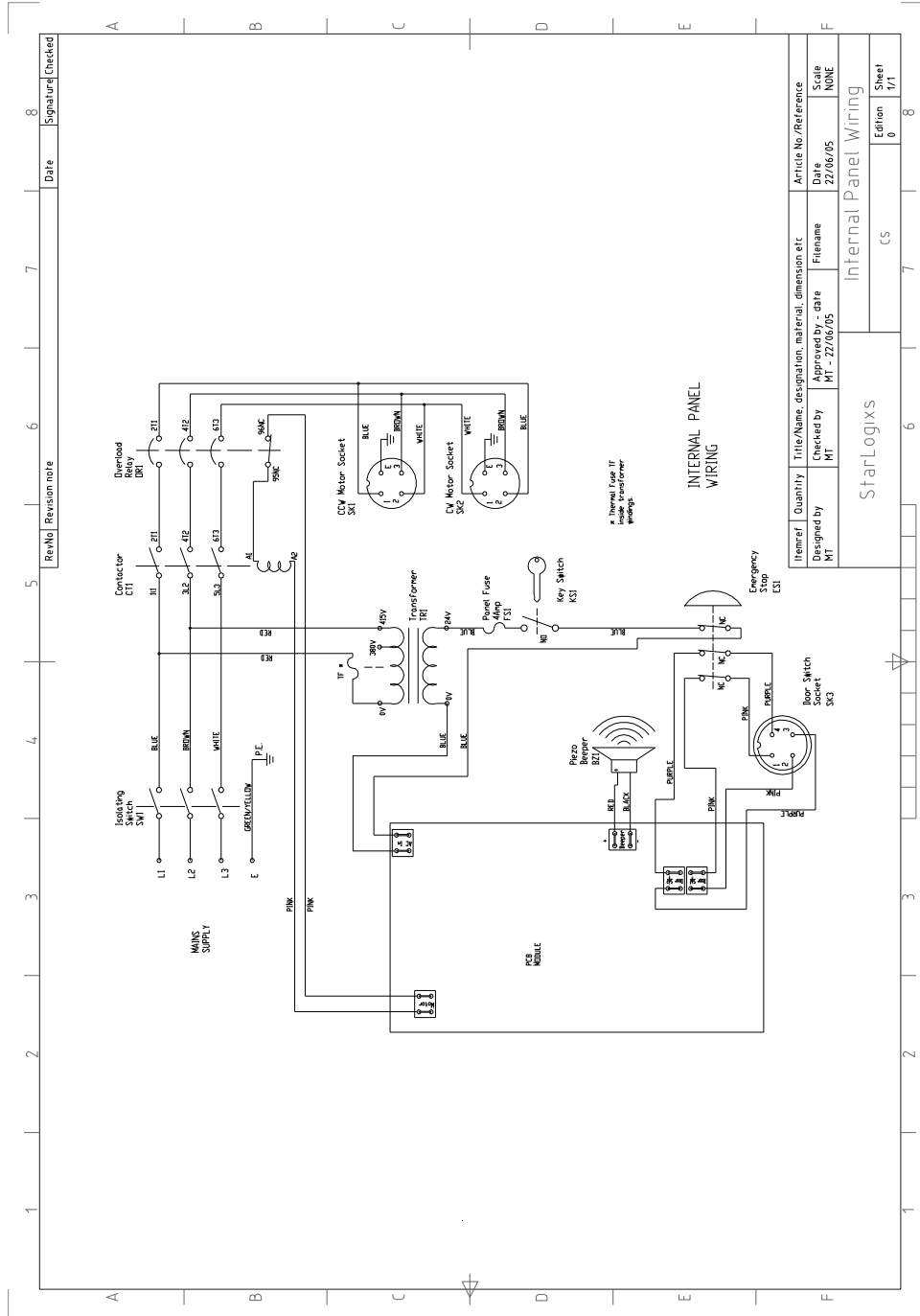
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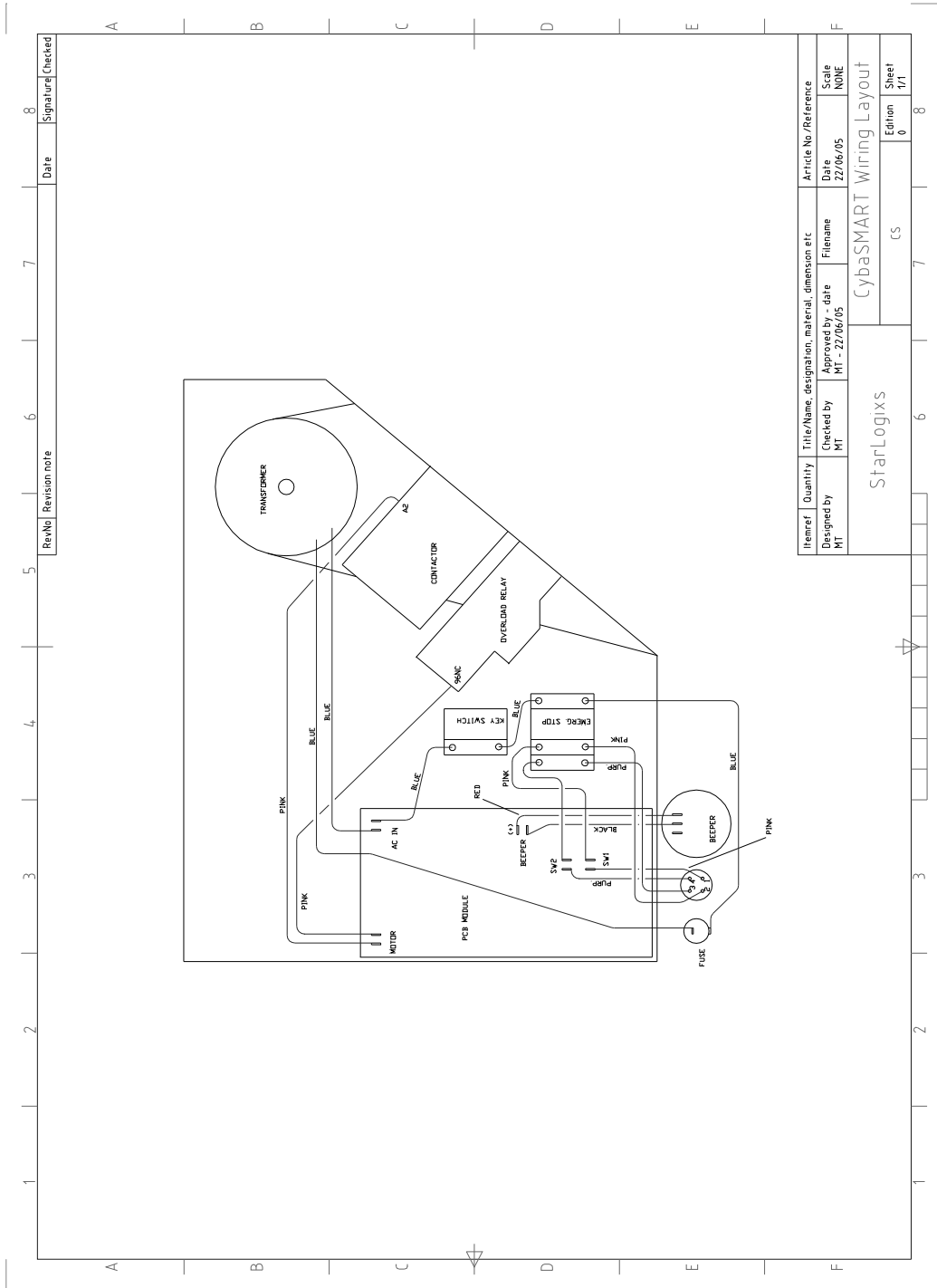
5.0 Trouble-Shooting - Internal Panel Wiring



RevNo	Revision note	Date	Signature	Checked
8				
7				
6				
5				
4				
3				
2				
1				

Item#	Quantity	Title/Name, designation, material, dimension etc	Article No./Reference
Designed by	MT	Approved by - date	Date
Checked by	MT	Filename	Scale
		Internal Panel Wiring	NONE
		StarLogix	
		cs	
		Edition	Sheet
		0	1/1

5.0 Trouble-Shooting - Wiring Layout



Rev No	Revision note	Date	Signature	Checked
8				

Item ref	Quantity	Title/Name, designation, material, dimension etc	Article No/Reference
Desigined by MT		Approved by - date MT - 22/06/05	Date 22/06/05
		Filename	Scale NONE

CybaSMART Wiring Layout

StarLogix

CS

Edition
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Sheet
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6.0 Specifications

Power Supply 415Vac 50Hz 20A
Control & Sensor Power Supply 24Vdc fully mains isolated
Motor Rating SL100 3.0 kW Three Phase
 SL200 3.0 kW Three Phase
 SL400 5.5 kW Three Phase
 SL250 5.5 kW Three Phase

Motor Protection: Auto resetting thermal overload relay
Panel Fuse: 4A MGC 32mm Glass Type
Hopper Detection System: Infra Red encoded beam type
Door Closed Detection: Non-Contact Magnetic Encoded Switch

- All control and sensor wiring is mains isolated.

6.1 Copyright

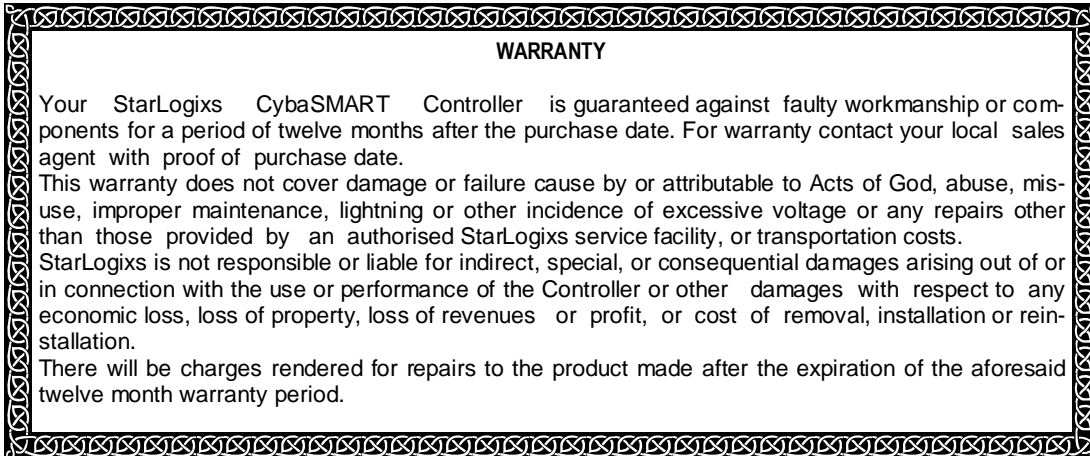
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6.2 Trademarks

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13 Carl Baer Circuit
DEEPWATER. N.S.W. 2371 Australia
Phone: (02) 67 345 262 Fax: (02) 67 345 020
www.starlogixs.com.au