

Uncontrolled Movement Detector for Bi Directional Rope Brakes

Installation Manual
Version 4.0 Includes New Wiring



Serving the lift industry since 1996
Operation and Installation Manual

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Overview

The movement detection controls are designed to be installed with new lifts and retro fitted to existing passenger and goods lifts and used in conjunction with the bi-directional VG rope brake (VGRB2).

The movement detection controls connect to the main lift control panel. From here it can receive power and signals to tell if the lift doors are open, or that the lift over speed governor is OK. It also sends signals to the lift to say stop on next floor if there is a problem, or emergency stop.

The system will always deploy the brakes immediately and interrupt the main lift stop circuit, if over speed is signalled or if the emergency stop button on the front of the panel is pressed.

The movement detector detects movement by looking at an idler wheel resting on one of the main ropes. As the rope moves so does the idler wheel, and as the idler wheel rotates movement and direction is detected.

When the doors are open the system is checking for excessive movement. If excessive movement is detected then the brakes under its control will be deployed and in addition to this an emergency stop signal will be sent to the main lift control panel, by means of interrupting the main safety circuit.

There are other functions included with the system such as indication of status to assist fault finding, resetting of the brakes, manual override to test the deployment of the brakes, ability to bypass the system (allowing car top control, without deploying the rope brakes) and pit safety to monitor lift motion when engineers are in the lift shaft or pit.

Power loss is catered for by the incorporation of an internal battery back-up system to seamlessly switch from mains power to battery and back again without the need for manual intervention to reset the brakes. But if during the power loss excessive movement occurs, or that the over speed governor trips, the brakes will be deployed and a full reset will be required.

If during its normal operation the system develops a fault then an error or alert signal will be sent requesting the lift stops at the next floor, doors opened and stays there until the fault is corrected. During this time whilst the doors are open the system will continue to detect excessive movement.

Safety Notes



Both employers and employees have a duty of care in relation to the health and safety of people or property which may be affected by their actions, or failure to act. Therefore, building owners, or those who have responsibility for controlling buildings are required under the Management of Health and Safety at Work Regulations to ensure that their premises are safe and free from risk to health so far as is practicable. This includes access to the plant equipment and articles or substances used and in this particular respect will be relevant to the Workplace (Health, Safety and Welfare) Regulations.

Installation, commissioning and maintenance of this system should only be carried out by authorised persons who have received the necessary instruction, because it is dangerous for any other persons to attempt to do so.

Any failure to take adequate precautions may render the authorised person guilty of negligence should an accident occur.

It is essential that a "Competent Person" has installed and commissioned this system. It is also essential that a "Competent Person" maintain this system in a safe manner and at regular intervals.

The "Competent Person" must have had adequate training in theory and practice together with experience of the equipment in question; to enable a true assessment of its condition for continued safe operation.

No alterations, modifications or repairs to this system or its components should be undertaken without the written consent and advice or instruction of the supplier Atwell International. Any advice or instructions from the supplier must be followed; any deviation may risk the safe operation of the lift. Even if consent is given then all the risks associated with the work will have to be suitably and sufficiently assessed by the owner before these alterations are implemented.

No replacement parts other than those specified or supplied by the supplier Atwell International should be used as incompatible parts may risk the safe operation of the lift. Genuine spares are available within 24 hours at a reasonable cost. But if spares are needed quicker then exact same or equivalent parts may be sourced locally once the exact specification of those parts has been obtained and you have suitably assessed the implications of using non standard parts. If there is any doubt then you should render the lift out of service and contact Atwell International or one of its appointed agents for assistance.

Owners Obligations

The Owner of the Lift or any delegated party shall inform the Maintenance Company immediately:

- a) about any detected abnormal functioning of the installation;
- b) before any modification work on the installation;
- c) about any modification of any equipment or condition related to the installation which existed at the time of the original installation;



In the case of suspected or actual dangerous situations, the installation shall be put out of service immediately.

We strongly advise that you should carry out a Risk Assessment to determine, as completely as possible, the different intervention procedures of the maintenance operations and to associate appropriate safety measures with each of these procedures.



This Warning Label is incorporated into the control box lid graphic to warn you of Live Electrical Parts, DO NOT REMOVE the lid if you are not a competent electrician capable of safely assessing the potentially dangerous internal connections.

Specification

Operation

A sensor is fitted to an idler wheel or tension weight pulley acting from a wire rope attached to the lift car. The sensor will detect movement in either direction.

A controller box will be fitted nearby and connected to the sensor, main lift control panel, over speed governor & Rope brakes.

Once the system has been installed and set up and the rope brakes have been reset.

The controller will receive an external signal to say that the lift doors are open, which will activate the system to "Monitor for movement".

If movement is detected above the predetermined limit of 100mm to 900mm, (*actual pre set limit is 150mm but can be modified to suit customer requirements*) the controller will actuate a safety relay causing all safety systems to be deployed. Once deployed, the controller will deliberately not allow the lift to run or revert to a normal state until the brakes have been manually reset.

If no movement was detected and the controller receives a signal to say doors are closed it will deactivate and allow normal operation of the lift and primary safety circuit.

During its operation the control box will also continue to check the integrity of the connection to the sensor assembly. It will also monitor the status of the brakes.

It will perform a simple self diagnostic test to ensure all sensors are working, if a fault develops a fault signal will be sent to the main lift control panel to request it to bring the lift to halt at the next floor and open the doors (Please note the controller can only send the signal and not control stopping of the lift). When the doors open the brakes will be deployed.

If during the Monitoring phase the connection to the sensor is lost, the brakes will be deployed.

Due to the battery backup, if mains power fails with the doors open, the system will continue to operate and safely monitor for movement. If mains power fails when the doors are closed the system will automatically monitor for movement but will allow greater movement before applying the brakes.

The system is directly connected to the lift over speed governor. So if over speed is signalled the rope brakes will be deployed immediately.

The control panel is fitted with an emergency stop button; this will allow immediate deployment of the rope brakes with manual control.

Maintenance, other than checking cleanliness of idler pulley assembly, is not required for the actual components of the system, but it will be strongly recommended that the operation is regularly checked and tested by competent persons (lift engineer) to comply with the regulations.

The System

Robust metal enclosure, Fail Safe Design, easy site wiring especially with plug and socket option, where the sensors, brakes and controller will be connected via a plug and socket arrangement to assist on site wiring.

Power feed and lift panel connections will be the responsibility of the end customer.

Set of parts to be supplied in the full system include;

- Control Box (UMD-SRB01)
- Sensor Box (UMD-SP01)
- Sensor Mounting Bracket and fixings
- Set of 3 interconnecting cables,
- 32 Way interconnecting Hood,
- Set of documentation (in English)

The Movement Detector (UMD-SP01)

The movement detector will be a fixed non-contact non-adjustable type.

The actual motion sensors are enclosed in a sealed enclosure to protect from moisture, vibration and tampering. This is a non-serviceable component, any doubt then it should be replaced.

The movement detector is sprung mounted to a bracket. The bracket is directly mounted to the rope brake assembly. Alignment and tension to the rope can be adjusted.

The Detector is constantly monitored, so if there is a fault with it or the connection to it then an ALERT signal will be sent to the main lift panel. This is to request the lift to be stopped at the next level, open doors then render itself out of action. If the fault is detected whilst the doors are open then the brakes will be deployed, because this is the worst case scenario and the system must be fail safe.

The Controller (UMD-SRB01)

The controller will be enclosed in a painted steel enclosure suitably rated for the lift control room. It is approximately 450mm long x 300mm tall x 150mm deep.

With the exception of replacing the battery and the relays every 3 years it does not require any maintenance, other than periodical testing and inspection in accordance with your site risk assessment and the lift regulations.

It contains a programmable safety device, display, visual and audible indicators, key switch, battery, power supply and fuses.

The UMD-SRB01 controller has been designed and constructed to comply with all current CE requirements, i.e. EMC, Low Voltage, RoHS, WEEE and more specifically to meet the requirements of EN 81-80: 2003 5.9.4 Uncontrolled Movement with doors Open.

With simple modification to the door wiring connections now also complies with latest EN81-20/50:2014.

Indication of the system status will be provided by LEDs i.e. power on, monitoring, brakes set OK and emergency stop.

In addition to this there is a small visual display showing a text interface explaining the status and warnings.

The UMD-SRB01 has two switches, one is an emergency stop button which when pressed will immediately deploy the brakes. The other switch requires a key to operate it, this is because regulations require a competent person to reset the brakes in the event of them being deployed. So to prevent any unauthorised tampering or resetting or bypassing of the system a key is used. We supply 2 keys per system; these should only be made available to competent persons. The key switch will allow the brakes to be reset and the system to bypass the motion detection, during maintenance, etc.

An audible alarm is included within the UMD-SRB01 controller; this will beep at different rates, one slow pulse for bypass mode and a quicker pulse for reset mode.

Signals

Controller input power supply will be 230V or 110V AC 50/60Hz, it has an internal 12v DC control voltage, power supply and battery backup.

The system requires the following signals and connection to the external contacts to enable it to operate.

1. A car Door Open / Closed Input signal.
2. A landing Door Open / Closed Input signal.

These inputs should be connected to a Dry / volt free, normally open, pair of relay contacts wired parallel. It only requires a maximum switching current of 0.25A 12V DC.

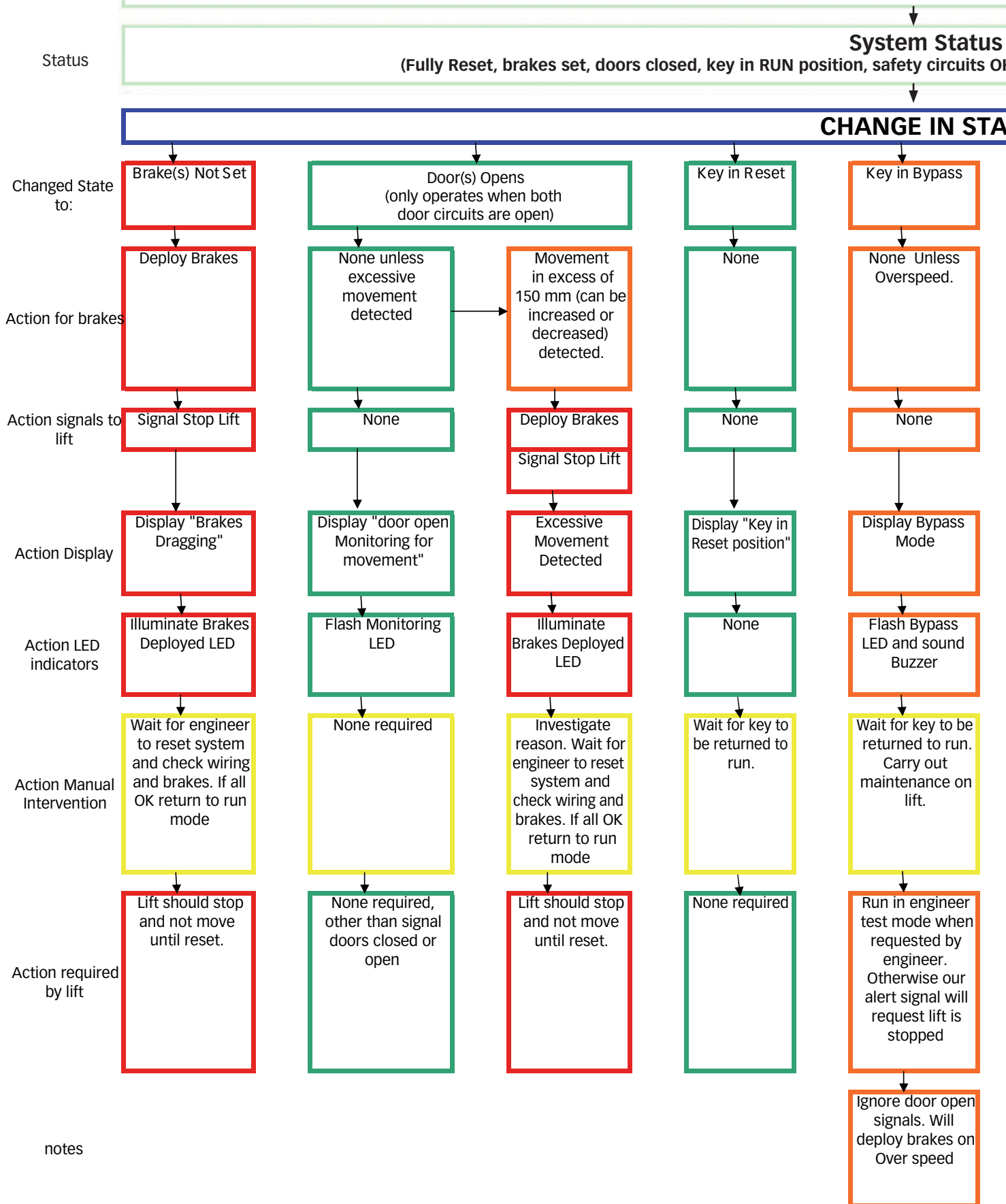
3. An over speed OK signal, normally closed when no over speed, opens when lift is over speeding.

Please note if the lift loses mains power the above door signals will open, therefore the third signal we need must be connected directly to the over speed governor switch, as if this signal opens the brakes will be immediately deployed.

Output signals from the controller will be volt free relay contacts. The contacts are rated for up to 6Amp Max at 250VAC. These are:-

4. Main Lift Safety Circuit Output Signal.
5. Main Lift Alert Output Signal

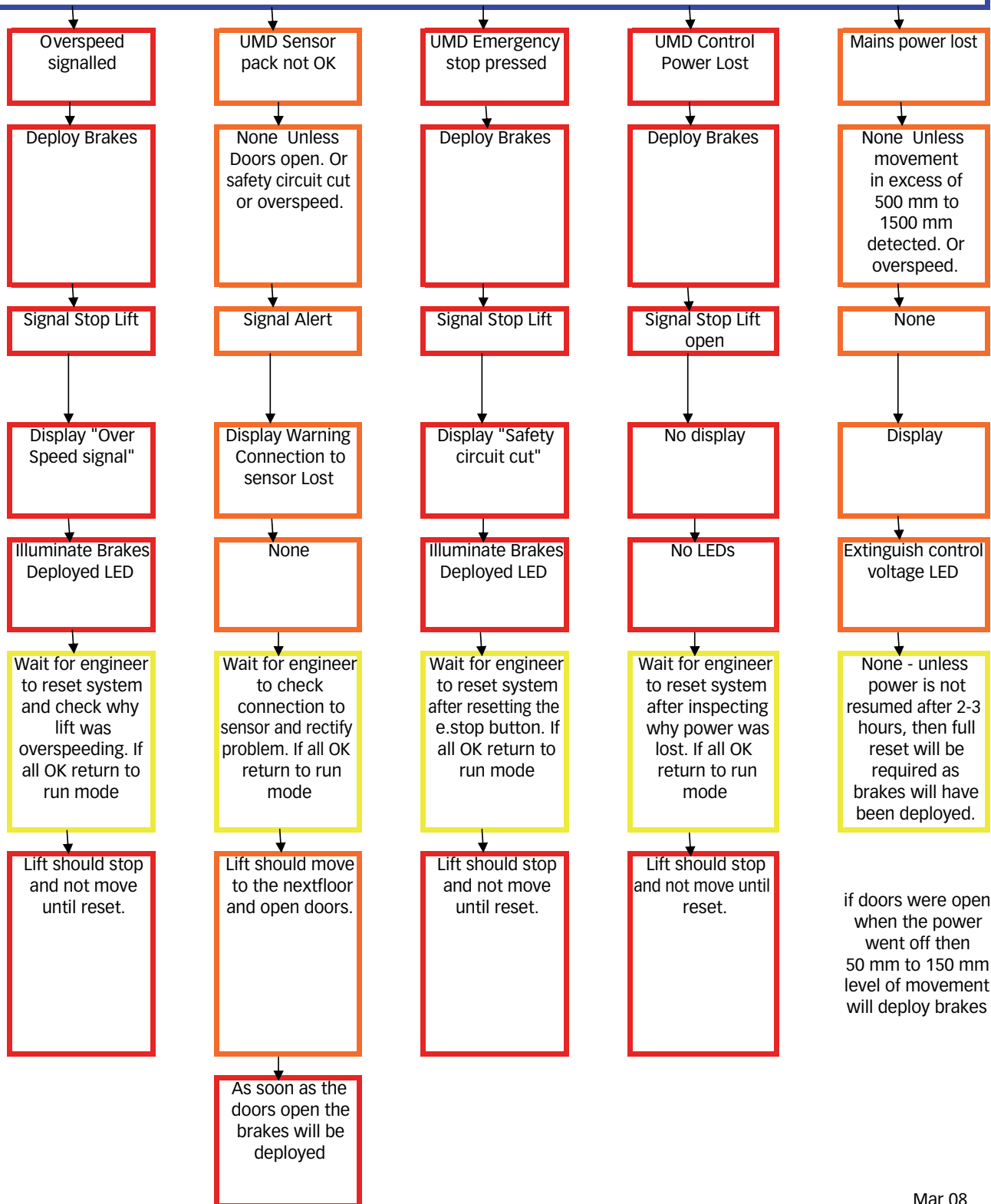
Atwell Uncontrolled Movement Detector and



Rope Brake controller – Normal/Run Mode

= OK
(K, overspeed governor OK, sensor pack OK, emergency stop OK)

STATUS OF SYSTEM



Mar 08

Handling, Transport and Storage

The components of this system have been carefully packaged for shipping, including strapping and strong tape. If you use a knife to cut open the boxes, please be very careful to ensure that you only cut through the tape and straps and not through the cardboard potentially damaging the components inside.

Please inspect the components of this system thoroughly prior to attempting to install it. If the Brakes, Cables, Controller or Sensor has been or suspected to have been damaged or exposed to moisture, they should not be used. Please return them to Atwell International for examination and re-test.

The brakes, control boxes or sensors should never be lifted or carried by their cables. They should never be allowed to get wet or exposed to moisture.

Components Supplied

Please check that the following parts have been supplied and received in good order prior to attempting to install the system.

- Movement Detector (UMD-SP01).
- Movement Detector Bracket and fasteners.
- Control box (UMD-SRB01).
- Spare fuses. (2 types 2 of each)
- Mating 32 way multipole plug.
- Manual & Documentation pack.
- 2 keys.
- 3 Prewired cables for simplified installation.

Installation

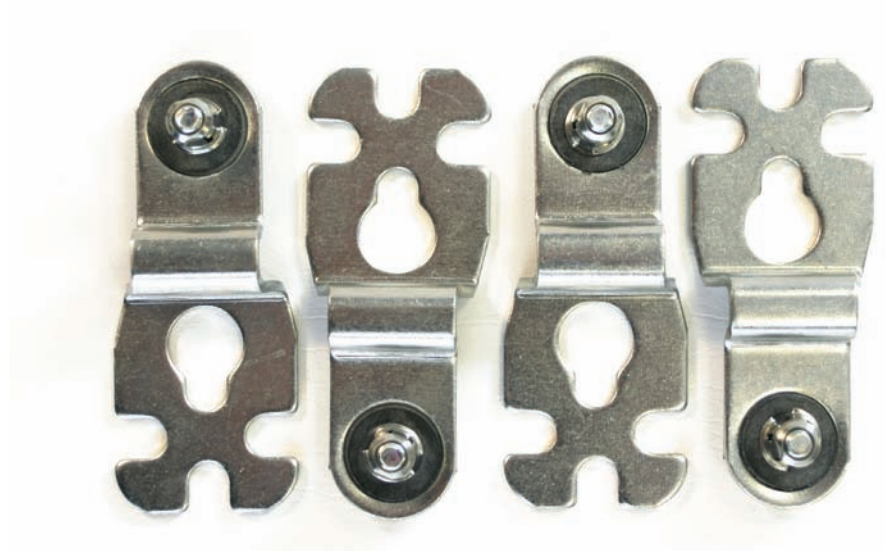
General Advice

The area for which this unit is intended should comply with the lift room regulations so that its installation, operation and maintenance is carried out in a risk free environment.

Specific hazards arise for inadequate lighting, untidy work area, trip hazards and poor access.

The Control Box (UMD-SRB01)

It is recommended that the Control box is ideally mounted at approx 1.5 metres high on to a solid wall adjacent to the main lift control panel and close to the rope brake and monitoring pulley position. Consideration should be given to access for operation and maintenance of the control box as well as ease of cable runs.



Mounting Brackets with keyholes

The enclosure weighs approx 8 kg, it is supplied with 4 brackets, one on each corner. Use suitable screws and rawl plugs to secure this control box to the wall.



Fixing in place

Wiring

Once the control box is in place, cable runs can commence. See Drg. page 16 CONNECTION OVERVIEW DIAGRAM for help to plan the cable runs.



There is a 32 way connector supplied, which has an industry standard PG thread. It is intended that flexible armoured conduit is used to prevent strain and damage to the individual cores.

We would strongly suggest that the power is fed from the main lift panel protected by a circuit breaker Type D rated at 3 Amps. The cable run should be as short as possible. If the length does not exceed 2 metres the size should be at least 1.5mm². Stranded tri-rated PVC insulated. It should also comply with local regulations.

The 32-way connector is fitted so as to prevent the need for access inside of the control box. If you should need access to the inside of the control box please contact Atwell International for written consent as your warranty may be invalidated if the internal seals are broken.

During wiring great care must be taken to ensure that there is no risk of short circuits from stray strands, cross connection, loose terminals or strain on cable joins. All terminations should be made using boot lace ferrules or similar and each wire appropriately identified with its corresponding wire number at each end of the cable. Wiring of power and internal main lift connections must be carried out by a competent electrician, and checked prior to applying power.



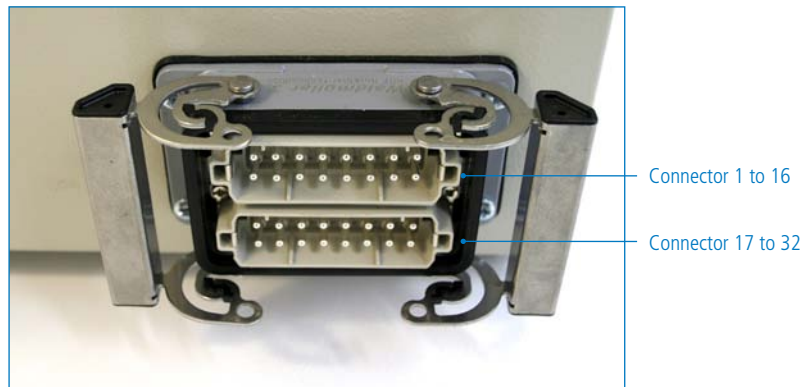
SAFETY NOTE: Once connected to the main lift control panel there will be potentially live connections within the UMD-SRB01 enclosure and the terminal housing even when the fuses for the enclosure have been withdrawn. Within the UMD-SRB01 enclosure the internal connecting cables are coloured orange, this is so that you can easily identify them as potentially live, check them and beware of them.

Fitting of fuses

Note: The 2 Fuses are not fitted during shipping. The competent electrician must only fit them after testing the wiring of the 32 way terminations and immediately prior to switching on the power for the first time.



Wiring (continued)



Make Sure Power is disconnected prior to attempting to check or replace fuses. As there are live terminals connected through to the end of the fuse so if you touch the fuse it could be Live!

Please check rating against labels of each fuse.

F1 =	Internal Power Supply	1.25Amps (230V AC)
F2 =	Control voltage	2.5Amps (12V DC)

The Fuses we use are Manufactured by SIBA and they are:

5mm diameter x 20mm long glass fuses

Rated at 250V, with SEMKO – DEMKO – BSI – UL – CE approvals

To IEC 60127 – 2 / 3 and DIN VDE 0820

Breaking Capacity L 35Amps AC (min. 10 x In)

T (Time lag)

TYPE 179 120 Part Numbers 70 001 35 97160/1 2.5A

TYPE 179 120 Part Numbers 70 001 35 17743 1.25A

Connections to the Main Lift Control Panel must be carried out carefully to ensure that the correct function of the signals is produced.

The control box input signals are 12V DC 100mA they require a dry / volt free relay contact normally open and energised when the Car and Landing doors are closed.

In addition, a connection directly to the normally closed (when not in over speed condition) over speed governor switch is required.

The operation of these switches is essential to enable the UMD-SRB01 to operate safely, i.e. If a cable is broken or the lift over speeds the UMD-SB01 will be FAIL SAFE. i.e. any problems, the brakes will be deployed.

The connection from the Main Lift Panel such as Alert signal and emergency stop must be 230Volts maximum and must not exceed 5amps. The control box provides dry / volt free relay contacts for your signals. This is done by connecting via the 32 way Multipole Plug & Socket.

On the next page there is a list of all the connections to the multipole plug and their functions.

Please also see electrical drawings supplied with this manual for further information.

SAFETY NOTE:



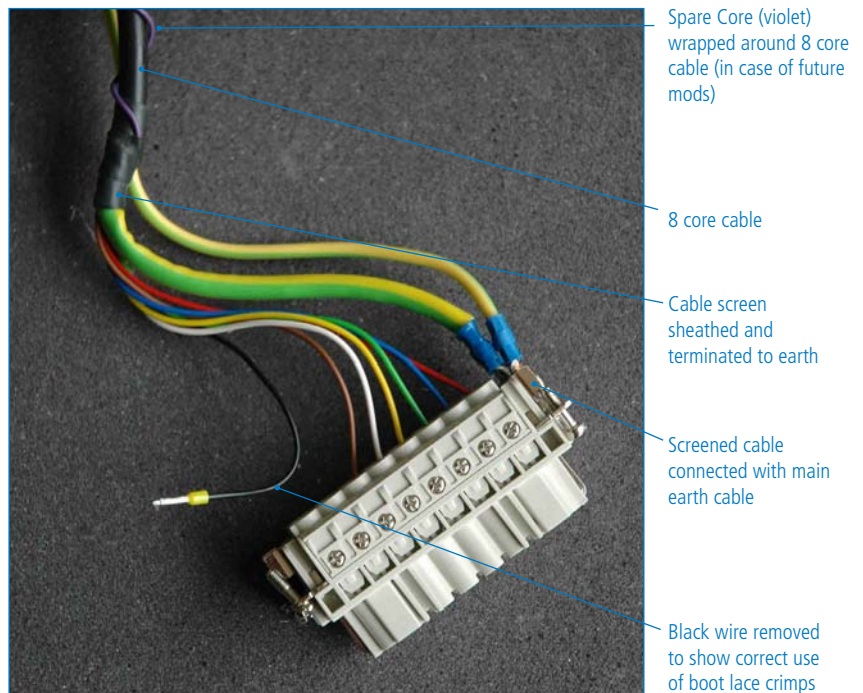
DO NOT TAMPER WITH THE CONTROL BOX

If it does not allow the brakes to reset then
there is still a problem with the lift!

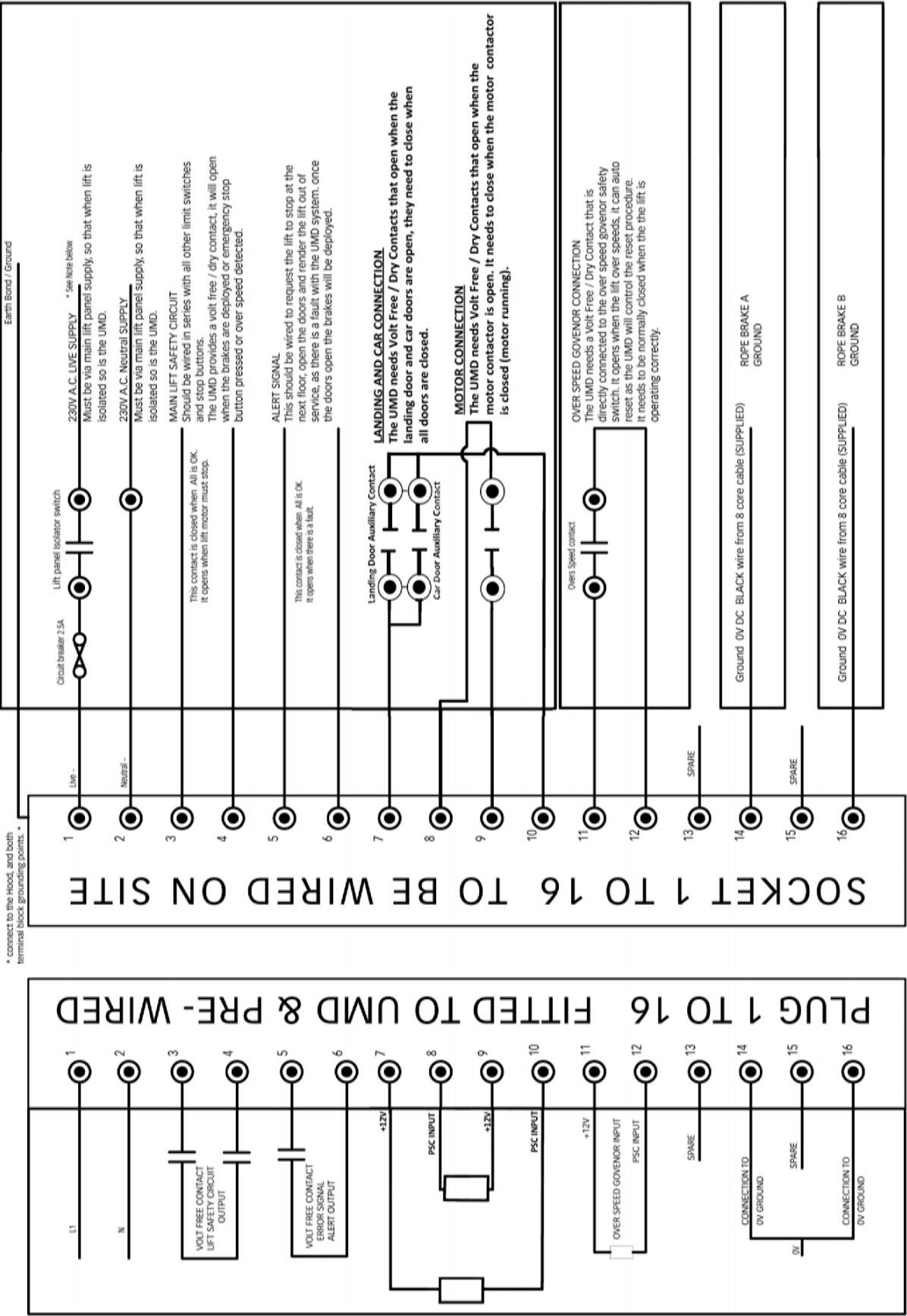
Rectify the problem and the controller will allow a reset.

Do not leave the lift to run in engineer “bypass mode”, this is purely a function to allow you to carry out maintenance on the lift without triggering uncontrolled movement. You will have circumvented the part of the safety circuit.

Correct Wiring of the Sockets



Wiring (continued)



* connect to the hood, and both terminal block grounding points. *

SOCKET 1 TO 16 TO BE WIRED ON SITE

PLUG 1 TO 16 FITTED TO UMD & PRE-WIRED

Please Note : These cables are not supplied by ATWELL

Please Note : These cables are not supplied by ATWELL

TO OVER SPEED GOVERNOR

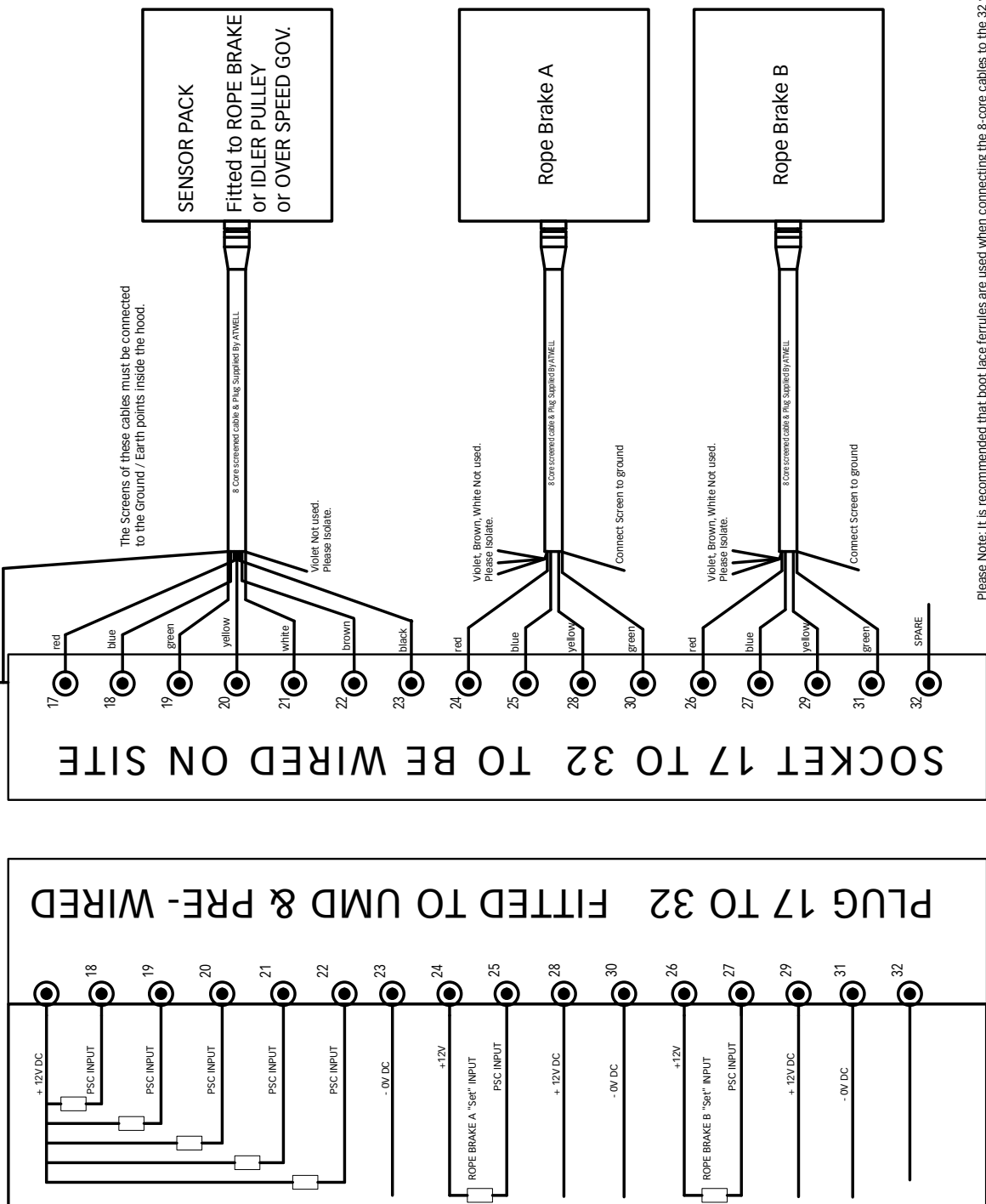
DIRECT CONNECTION

* Note: IF YOU REQUIRE DIFFERENT MAINS SUPPLY VOLTAGE PLEASE SPECIFY AT THE TIME OF ORDERING.

CAUTION !
Make sure the socket with pins 1 to 16 mates with the correct plug on the UMD.
It is interchangeable with Pins 17 to 32!

* connect to the Hood, and both terminal block grounding points. *

Earth Bond / Ground



Please Note: It is recommended that boot lace ferrules are used when connecting the 8-core cables to the 32 way terminal blocks.

Please ensure all spare cores are insulated and secured.

CAUTION !
Make sure the socket with pins 17 to 32 mates with the correct plug on the UMD. It is interchangeable with Pins 1 to 16!

Mechanical Installation

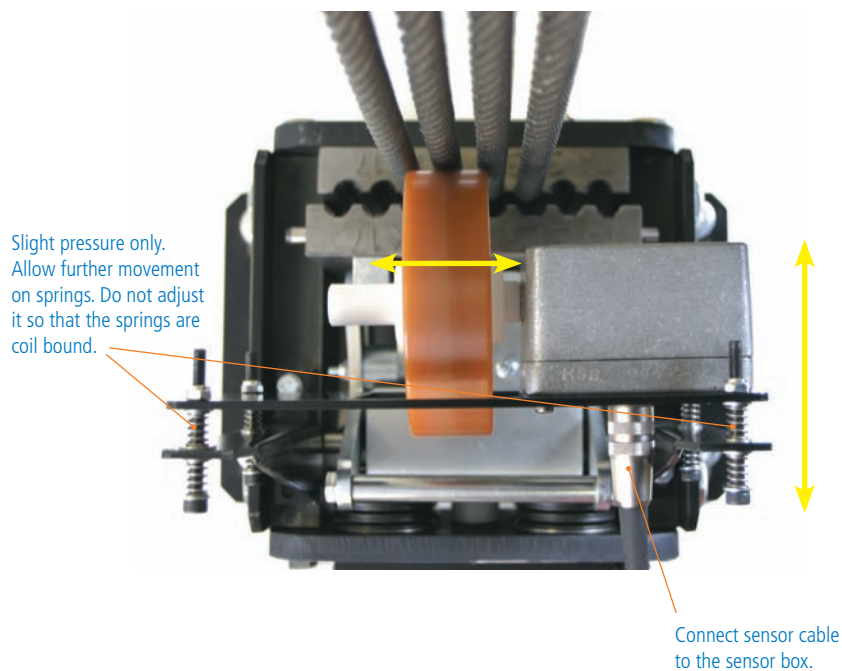
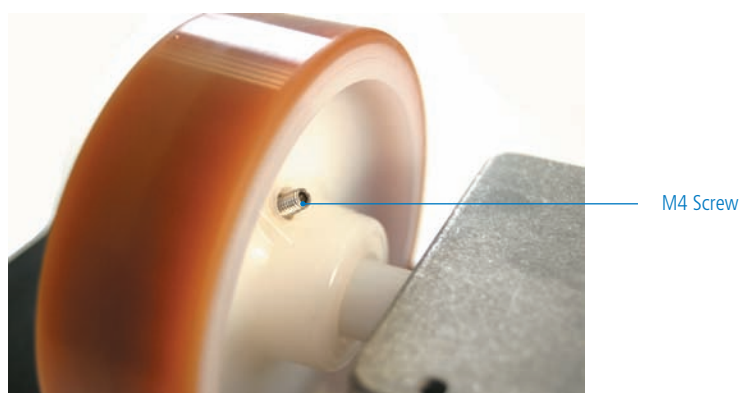
For information on mechanically installing the ROPE BRAKES please see the specific documentation for the individual items as supplied.

Please note this device is a precision encoder device and is not capable of withstanding a drop or severe mechanical shock, so never use a hammer to adjust it.

It is also sealed, there are no user adjustable or repairable parts inside it, all warranties will be void and the product will be destroyed if you open it. If you suspect it is faulty then replace it, return to Atwell International who will inspect it and will supply a replacement unit if it was found to have failed under warranty.

Securely bolt the brackets supplied to the tapped holes provided in the rope brake side bars, adjust backward or forward for **slight tension** against the rope.

It may be necessary to adjust the alignment of the wheel to the rope. This is done by carefully unscrewing the M4 cap head retaining screw on the wheel, and then sliding the wheel so the rope is centred on the wheel. Re-tighten the M4 cap headscrew onto the shaft.



Check for smooth operation and no excessive play or run out.

Connect the other end of this sensor cable to the UMD-SRB01 panel via the 32 way connector, if you have not done so yet.

Normal Operation

Resetting the System

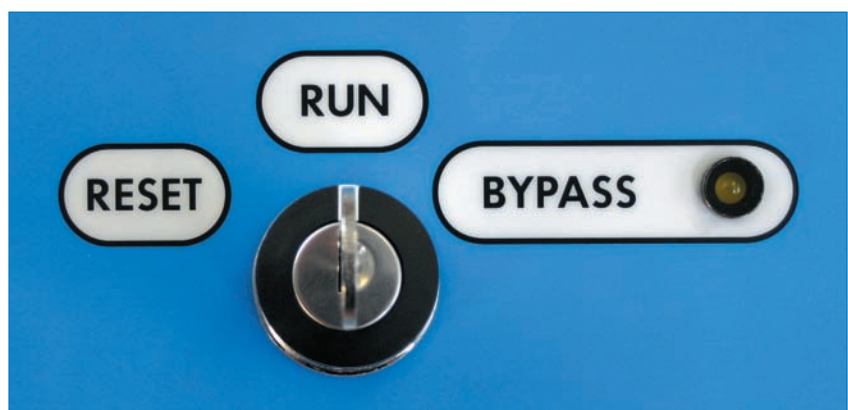
To "SET" the system for the very first time is the same procedure as each time you need to "RESET" the system, and that is as follows.

- Check that all faults are cleared and that there is no reason why the lift cannot be put back into service. i.e. reason for brakes to be deployed has been rectified.
(If there are faults rectify them first.)
- Check that there is power at the controller i.e. "Control Voltage" LED is illuminated.
(If there is no power test fuses etc, find out why)
- Check that there are no brakes displaying that they are already "SET".
(If they are already displaying "set" then check internal switches of the rope brake)
- Insert the key into the reset/run/bypass switch.
- Turn the key to the reset position and leave it there whilst the brakes are reset.
(A sounder will beep to remind you that the system is in reset mode, also the lift will be prevented to run until the brakes are reset and the key is returned to run position.)



Warning the safety devices controlled by this controller are bypassed while the key is in this position.

- The rope brakes will require lifting into position, and then they will hold there.
- System is now SET.
- Return key to central RUN position.



If the Rope Brakes are not resetting -

- Recheck wiring
- Check wiring of switch and magnet.
- Check connection of 8 pin plug.
- Over speed circuit fault
- Emergency stop button pressed in.

Bypassing the System (Engineering Maintenance Control)

To "BYPASS" the system you will disable the movement detection function, but if the lift over speeds then the brakes will still be deployed.

This function is purely for testing and maintaining the lift. When in this mode a sounder will beep every 30 seconds, to remind you that it cannot be left in this mode. A LED indicator will also flash adjacent to the key switch.

If you are sure you need to bypass the movement detection then this is how it should be done.

- Check that there are no faults present and that there is no reason why the lift cannot be put into service.
- Check that there is power at the controller i.e. "Control Voltage" LED is illuminated.
- Insert the key into the reset/run/bypass switch.
- Turn the key to the bypass position and leave it there, after a short time delay a message will appear "ENGINEER BYPASS MODE".



Warning the safety devices controlled by this controller are bypassed while the key is in this position.

To get back to a normal running mode.

- Return key to central RUN position.

Test Deployment of Brakes

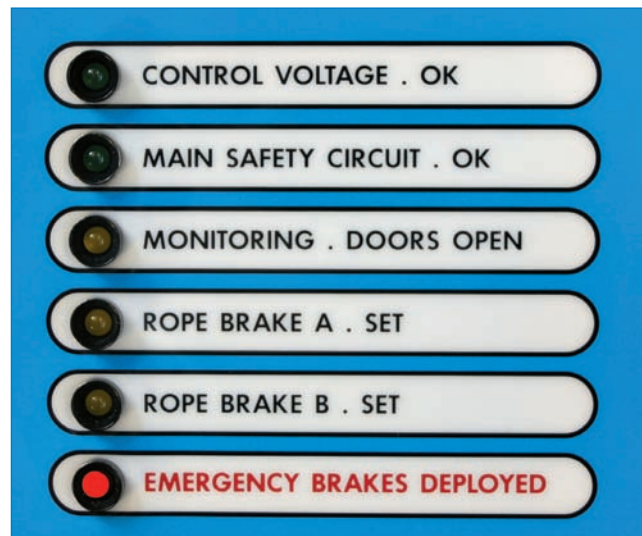
To test deployment of the rope brakes follow the procedure below.

Note: this will also send an emergency stop signal to the main lift panel to prevent the lift from moving. This stop signal can also be tested this way.

- Check that there is power at the controller i.e. "Control Voltage" LED is illuminated.
- Press the emergency stop button.



- The brakes will be immediately de-energised and subsequently deployed.
- Check that both brakes SET LEDs have been extinguished.
- Check that Emergency Brake deployed LED is illuminated.



To reset

Twist and Pull out emergency stop button.

Turn key switch to reset.

Lift up both rope brakes

Return key switch to run position.



Please note the Key is retained in either Test or reset positions. It can only be removed when in the normal run position.

Uncontrolled Movement Settings

The UMD-SRB01 control box has factory set coding that allows it to receive 2 types of pulse counts from the UMD-SP01, these are the slow speed count and the high speed count. The reason for this is to provide 2 different types of movement detection.

1. Slow Count – This is to monitor for slow creep away from the landing level with the doors open, this could also be referred to as the trip hazard.
2. High Count – This is to monitor for sudden explosive movement away from the landing floor with the doors open, this could be as a result of a sudden loss of traction.

The slow speed counter is also able to distinguish directional movement so will not cause false tripping should there be lift bounce when passengers enter and exit the lift car.

As each count equates to 3.142mm of movement, the factory settings are as follows:

Slow speed count = 25 ($25 \times 3.142 = 78\text{ mm} \pm 50\text{ mm}$)

High Speed count = 80 ($80 \times 3.142 = 250\text{ mm} \pm 50\text{ mm}$)

These parameters are variable and should they require changing please contact Atwell International for details.

To prevent the false activation of the rope brake should a door lock be tripped whilst the lift car is in flight, the controller has an inbuilt time delay of 0.1 seconds before registering the count, as long as the door lock closes again before the count reaches 80 the rope brake will not be deployed.

Site Testing of Uncontrolled Movement

Test 1 – Slow speed creep away from the landing entrance.

1. Check local operating conditions and guard the lift entrance in accordance with local requirements.
2. The lift should be parked at a landing floor with both the landing and car doors open.
3. Ensure the UMD-SRB01 control box is monitoring the lift doors (LED flashing).
4. Fix the hand winding wheel to the machine and slowly hand wind the lift until the rope brake is triggered and the drop jaw has engaged the ropes.
5. Measure the height between the car floor and the landing floor. This should be 78mm $\pm$ 50mm.

Test 2 – Sudden loss of traction.

1. Check local operating conditions and guard the lift entrance in accordance with local requirements.
2. The lift should be parked at a landing floor with both the landing and car doors open.
3. Ensure the UMD-SRB01 control box is monitoring the lift doors (LED flashing).
4. Lift the machine parking brake and allow the lift to run away uncontrolled until the rope brake is triggered and the drop jaw has engaged the ropes.
5. Measure the height between the car floor and the landing floor. This should be 250mm ($\pm$ 50mm) + the slide distance (check the specific lift calculations). This combined total should be no more than 900mm as stated in EN81-80:2003 Section 5.9.4 Note 2.



Bi-Directional VG Rope Brake Installed Disengage Before Hand Winding

RELEASE INSTRUCTIONS

1. Check the visual displays on the "UMD-SRB01" control box.
2. Carry out visual inspection of the VG rope brakes, checking which brake has fully engaged.
3. Investigate reason for engagement and carry out appropriate action.
4. Read local hand winding instructions.
5. On the "UMD-SRB01" control panel insert the key and turn to the "RESET" position.

Note: An audible alarm will sound until the key is returned to the "Run" position.

6. On the deployed but not fully engaged rope brake, using the rope brake handle re-engage the drop jaw with the electro-magnet. Check the "ROPE BRAKE SET" LED is lit on the "UMD-SRB01" control panel.
7. Hand wind the machine in the opposite direction of the engagement for approximately 25mm. This will free the drop jaw from the ropes.
8. Using the rope brake handle re-engage the drop jaw with the electro-magnet. Check the "ROPE BRAKE SET" LED is lit on the "UMD-SRB01" control panel.
9. Continue following the local hand winding instructions for the geared machine.

NOTE: If no power and the battery back up has failed, release the drop jaw and insert the plastic mechanical stops to the back of the drop jaw.

TO RE-INSTALL LIFT SERVICE FOLLOWING HAND WINDING

1. Ensure both rope brakes are reset and the corresponding LED's on the "UMD-SRB01" are lit.
2. Ensure the reason for engagement has been investigated and appropriate action taken.
3. Turn key switch back to "RUN" position and remove key.
4. Check lift is working correctly.

Regular Maintenance

It is essential that a “Competent Person” maintain this system in a safe manner at regular intervals.

We would recommend that a monthly interval for an observational check, then every 3 months to 6 months for more thorough cleaning and checking, then an annual test.

The “Competent Person” must have had adequate training in theory and practice together with experience of the equipment in question; to enable a true assessment of its condition for continued safe operation.

No repairs to this system should be undertaken without the advice and instruction of the supplier (Atwell International). The advice and instructions from the supplier must be followed, any deviation may risk the safe operation of the lift.

No replacement parts other than those specified or supplied by the supplier (Atwell International) should be used as incompatible parts may risk the safe operation of the lift. Genuine spares are available within 24 hours at a reasonable cost, but if they are needed quicker then exact same or equivalent parts may be sourced locally once the exact specification of those parts has been obtained and you have suitably assessed the implications of using non standard parts. If there is any doubt then you should render the lift out of service and contact Atwell International or one of its appointed agents for assistance.



Safety Note

During any Maintenance work great care must be taken to prevent coming into contacting any live terminals, if there is any doubt then isolate the device, and test it with a multimeter to be sure it is not live. Because this controller connects to external power sources then do not assume that because the fuses are out there is no potential for electric shock.

Maintenance Instructions

Controller

Monthly

- Ensure exterior of the cabinet is clean and dry and free of dust.
- Check the LED indicators for correct function.

6 Monthly

- Check Fuses are correct rating and are intact.
- Check cable entry points are secure and free of damage.
- Check cables are strain free, adequately supported.

12 Monthly

- Check that the control voltage is at least 12V DC and no more than 14.5VDC.
- Check that when running on Battery the control voltage is at least 12.2V. If not charge the battery for 12hours and test again, if it does not hold a charge it must be replaced.

36 Monthly

- Replace the battery after a maximum of 36 months of service.
- Replace the 2 Safety relays after a maximum of 36 months of service.

Movement Detector Assembly

Monthly

- Check cleanliness of pulley clear any debris or of dust from assembly.

6 Monthly

- Check all moving parts for free movement and wear.
- Check rope alignment & excessive wear.
- Check bearings for play and end float.
- Lubricate springs when necessary.
- Check the security of all parts, ensure all nuts and bolts are tight.

Operational Checks

12 Monthly

- Check the correct functioning of the Test / Run / Reset / Bypass Key Switch.
- Check the correct functioning of the Electric safety devices.
- Check the deployment of the brakes.
- Check the correct functioning of the Alarm / Error signals.
- Check the movement detector (open doors and move idler wheel through 1 revolution, the brakes should be deployed.)

If during the routine visits it is apparent that there are any signs of damage or wear or abuse of any of the components of the system, then you must remove the lift from service until the faults are remedied and the installation is tested by a competent person.

Spare Parts

- Fuses 3- Ratings
- Relays 2 Off
- Battery
- Key Switch & 2 Keys
- Spare Keys
- 12V DC LEDs Red / Green /Amber
- Cables
- Sensor Pack (complete with mounting plate)
- Mounting Hardware

Please Contact us for immediate despatch and compliant parts.

General Information

Electrical Supply Voltage	230V +/-10%
Number of Phases	Single Phase, Neutral and Earth
Frequency	50 / 60 Hz
Full Load Current	2.5 A
Normal Running Current	1.25A
Type Of Safety Component	Bi-Directional Rope Brake.



Definitions

For the scope of this documentation the following terms are clarified to have the described meanings.

Owner of the Lift

The natural or legal person who has the power of disposal of the lift and takes the responsibility for its intended operation and use.

Emergency

An abnormal situation in which persons require outside assistance.

Fault

A situation of operation in which safe operation of the lift for its intended use is restricted or impossible.

Installer

The natural or legal person who takes responsibility for the design, manufacture, installation and handover of the lift, including its safety components.

Maintenance Company

A company which is given responsibility for carrying out company maintenance operations, and which has competent persons at its disposal.

Maintenance Operations

All necessary operations (lubrication, inspections, cleaning, operations etc.) to ensure the correct and safe functioning of the lift after the completion of the installation.

Repair

Replacement or repair of defective and/or worn components.

Safety Components

Components which are defined as safety components in the EU Lifts Directive (2014/33/EU).

Competent Maintenance Person

Persons with the knowledge, technical ability and equipment able to perform the tasks allocated to them without danger.

Very Important

Under no circumstance should any unauthorised attempt be made to read or alter the program within the safety controller.

The software contained is complex and has been meticulously inspected and passed by the British Standards Institute for compliance to applicable safety standards.

The software is under strict version control, it has been thoroughly tested, it has inbuilt redundancy and in built self checking for errors, the timing and order of the code is critical.

We strongly advise that under no circumstances should any unauthorised person attempt to gain access or alter the program.

If any attempt is made it will be logged and your warranty and any responsibility placed upon Atwell International will be immediately removed from ALL sites under your control, there will be no exceptions.

We will also report this as deliberate tampering with safety devices to the relevant approved bodies who certify your lifts.

If you need to alter parameters you must get written authority from Atwell International who will log this given authority, once they are satisfied your competence and reason for alteration.

Wherever possible we will issue a new program update in the form of a plug in EPROM upgrade for you at a minimal charge. This will ensure the system is to current standards and you maintain all warranties.

You must however inform Atwell if you plan to use or have used this upgrade at other sites.

Pulse Count Look Up Table

Each Pulse Count equals 3.142mm of movement Accuracy is +/- 50mm

Pulse Count	Lift Speed (m/s)	Actual Movement of the lift ropes(mm)	Pulse Count	Lift Speed (m/s)	Actual Movement of the lift ropes(mm)
25	0.08	79	1225	3.85	3849
50	0.16	157	1250	3.93	3928
75	0.24	236	1275	4.01	4006
100	0.31	314	1300	4.08	4085
125	0.39	393	1325	4.16	4163
150	0.47	471	1350	4.24	4242
175	0.55	550	1375	4.32	4320
200	0.63	628	1400	4.40	4399
225	0.71	707	1425	4.48	4477
250	0.79	786	1475	4.63	4634
275	0.86	864	1500	4.71	4713
300	0.94	943	1525	4.79	4792
325	1.02	1021	1550	4.87	4870
350	1.10	1100	1575	4.95	4949
375	1.18	1178	1600	5.03	5027
400	1.26	1257	1625	5.11	5106
425	1.34	1335	1650	5.18	5184
450	1.41	1414	1675	5.26	5263
475	1.49	1493	1700	5.34	5341
500	1.57	1571	1725	5.42	5420
525	1.65	1650	1750	5.50	5499
550	1.73	1728	1775	5.58	5577
575	1.81	1807	1800	5.66	5656
600	1.89	1885			
625	1.96	1964			
650	2.04	2042			
675	2.12	2121			
700	2.20	2199			
725	2.28	2278			
750	2.36	2357			
775	2.44	2435			
800	2.51	2514			
825	2.59	2592			
850	2.67	2671			
875	2.75	2749			
900	2.83	2828			
925	2.91	2906			
950	2.98	2985			
975	3.06	3063			
1000	3.14	3142			
1025	3.22	3221			
1050	3.30	3299			
1075	3.38	3378			
1100	3.46	3456			
1125	3.53	3535			
1150	3.61	3613			
1175	3.69	3692			
1200	3.77	3770			

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