

DRIM Installation and Operating instructions

UNPACKING AND INSPECTION

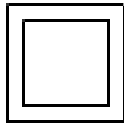
- If the equipment appears damaged in any way, return it to sales outlet in its original packaging. No responsibility for damage arising from the use of non-approved packaging will be accepted.
- Ensure all items and accessories specified are present. If not, contact your sales outlet or local Ruskin Air Management agent.

SAFETY SYMBOLS



The following symbols mean: -

Danger: electrical shock hazard



Double insulated

Caution: Read these operating instructions fully before use.

Use only as specified by the operating instructions or the intrinsic protection may be impaired.

SAFETY WARNINGS

Always observe the following safety precautions: -

- **THIS UNIT IS CLASS II CONSTRUCTION!**
- Ensure power supply links are set corresponding to the desired power supply voltage before wiring up.
- Always disconnect the equipment from the power supply and ancillary equipment before moving.
- This equipment is for use indoors in moderate climates only. NEVER use the equipment in damp or wet conditions.
- Avoid excessive heat, humidity, dust & vibration.
- Do not use where the equipment may be subjected to dripping or splashing liquids.
- Always use wire with insulation suitable for -5°C to 70°C .
- Ensure that the circuit isolator is easily accessible to allow the unit to be switched off.

This equipment contains no user-serviceable parts. Refer all repairs to qualified service personnel.

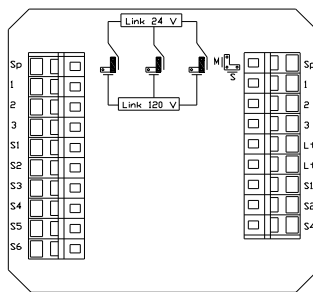
Overview and set up

Operating Voltage

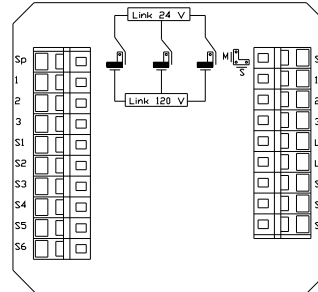
The DRIM is designed to control and monitor electrically motorised dampers (Spring return or drive both ways), operating from: -

- 24 Volts (ac (50Hz or 60Hz) or dc)
- 120 Volts ac (50Hz or 60Hz)
- 230 Volt ac (50Hz or 60Hz)

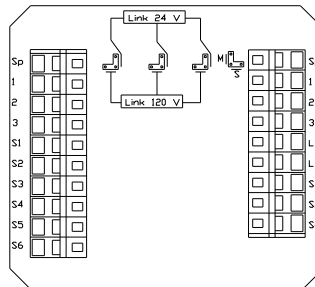
Connection must be via a 3A fused (Switched) spur. The actuator (Motor) should be of class II insulation (double insulated), the operating voltage must be matched to that of the supply to be utilised and the DRIM set up by means of links on the rear of the board (factory default 230V and Master), to match the supply voltage as illustrated below: -



Links set for 24Volt operation



Links set for 120Volt operation



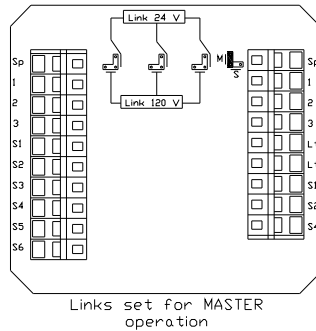
Links set for 240Volt operation - No links (Default)

Mode of operation

The DRIM may be operated as a single control unit controlling a damper or as two units controlling a damper enabling the damper to be controlled from both sides of a wall/bulkhead.

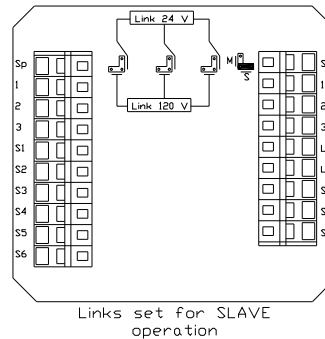
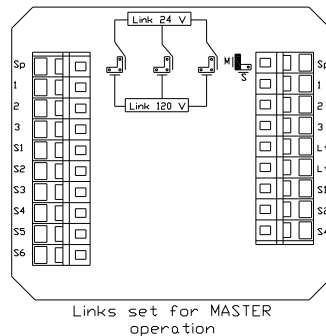
Single unit

The DRIM must be set to the Master mode of operation by setting the link as shown below and wired in accordance with drawing AA/F/10158 Sheet 1. (Supplied): -



Two units

The first unit (connected to the supply) must be set to the Master mode of operation and the second unit (connected to the first unit and the actuator) set to Slave as shown below, both units being wired in accordance with drawing AA/F/10158 Sheet 2. (Supplied): -



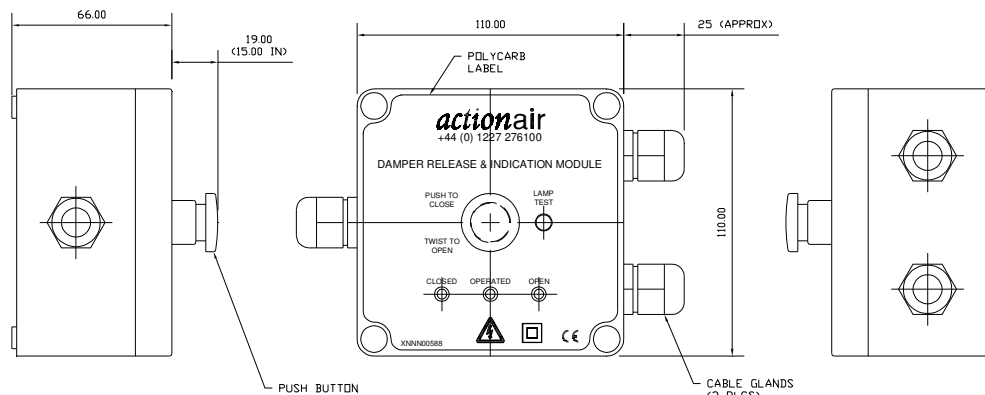
Installation

- Ensure unit is secured to the wall/surface/bulkhead using suitable 4 off 4mm fastenings and that the mounting surface is able to bear the weight and impact from operation.
- Ensure all cables are routed safely. Avoid sharp bends.
- Ensure that only specified cables are used for interconnection of equipment.

The DRIM should be mounted on a flat surface via the four mounting holes located under the box lid retaining screws. These are spaced at 95mm centres, the overall dimensions of the DRIM as shown below. 6-core cable of 0.75mm CSA minimum. The Master box must have one of the cable glands removed and the optional plug (Supplied) installed in its place.

Connections

In this variant, there is no provision for a cable for remote indication. Therefore an additional hole will have to be drilled in the enclosure (about the centre line on either of the un-drilled sides) and an additional I.P. 66 cable gland installed. Cables should be prepared with 75mm of the outer sheath removed and 5mm stripped off of individual cores. The cables should be inserted into the box through the cable glands and pulled through sufficiently to enable the wires to be inserted into their appropriate connections using the connector operating tool as supplied, in accordance with drawings AA/F/10158 Sheet 1 or 2. (Single unit or two units) Note: - the connections of the volt



The DRIM has been designed to be connected directly to the damper actuator (Motor) leads, the supply being fed via a 3A fused (Switched) spur using a cable of 0.75mm CSA minimum (maximum 1.5mm CSA). (If the DRIM is required to be mounted in a position further away than the reach of the actuator (Motor) cables then the DRIM

Extension box (Part No XNNN00666) should be used to extend the connection). When two DRIMs are used to control a damper, the interconnecting cable must be a 6-core cable of 0.75mm CSA minimum. The Master box must have one of the cable glands removed and the optional plug (Supplied) installed in its place.

Connections

Cables should be prepared with 75mm of the outer sheath removed and 5mm stripped off of individual cores. The cables should be inserted into the box through the cable glands and pulled through sufficiently to enable the wires to be inserted into their appropriate connections using the connector operating tool as supplied, in accordance with drawings AA/F/10158 Sheet 1 or 2. (Single unit or two units)

When all connections have been completed and checked, the cables should be fed back until the outer sheath can just be seen in the gland. Tighten the gland until it grips the cable and place the lid and board assembly on to the box, neatly folding the wires into the bottom of the box. Tighten the lid closure screws in an even manner. All cable glands must be checked and tightened to ensure a watertight seal on the cable.

Commissioning & operation

Note: - Allow time for damper to travel to end positions. Volt free relay contacts are not shown on the drawings referenced in this document.

Single unit

When set up, installed and connected in accordance with the above instructions (to drawing AA/F/10158 Sheet 1), power can be applied. Each condition as tabled below should be tested.

Single unit			
Operational condition	Red LED	Yellow LED	Green LED
Lamp Test	✓	✓	✓
Push Button Reset	-	-	✓
Push Button Operated	✓	✓	-

The DRIM is now commissioned ready for operation.

Two units – Master and Slave

When set up, installed and connected in accordance with the previous instructions (to drawing AA/F/10158 Sheet 2), power can be applied. Each condition as tabled below should be tested.

Operational condition	Two units					
	Master unit			Slave unit		
	Red LED	Yellow LED	Green LED	Red LED	Yellow LED	Green LED
Lamp Test - Master	✓	✓	✓	✓	-	✓
Lamp Test -Slave	✓	-	✓	✓	✓	✓
Push Button Reset - Master and Slave	-	-	✓	-	-	✓
Push Button Operated- Master	✓	✓	-	✓	-	-
Push Button Operated - Slave	✓	-	-	✓	✓	-
Push Button Operated – Master and Slave	✓	✓	-	✓	✓	-

The DRIMs are now commissioned ready for operation.

Maintenance

Once installed and commissioned, the DRIM is designed to be maintenance free in operation.

- Clean only with a damp cloth. Do not wet or allow moisture to penetrate the unit. Do not use solvents
- Regularly use the lamp test button to indicate that all LEDs light simultaneously. If a LED fails, return the unit for servicing. It must not be used with a faulty LED.
- If the 3A supply fuse fails immediately on replacement, contact your local service agent. DO NOT replace with a higher rated fuse.
- The products are designed to comply with EN 61010-1 and can be flash tested.

The attached damper should be subject to regular operation checks, cleaning and lubrication (as instructed by the manufacturer) in accordance with local requirements or at 12 monthly intervals.

Servicing

- This equipment contains no user-serviceable parts. Refer all repairs to qualified service personnel.
- For approved service contact your sales outlet or local Ruskin Air Management agent.

Faults

Control	LED			Possible fault
	Red	Yellow	Green	
Lamp test pushed	-	-	-	Supply failed
Push button operated Damper closed/released	-	-	-	Supply failed
Push button operated Damper open/reset	-	✓	✓	Check damper - Possibly jammed
Push button reset Damper closed/released	✓	-	-	Check actuator

Operating two dampers from one DRIM system

It is possible to operate two dampers (each with an actuator (Motor)) from one DRIM system. To do this the DRIM Extension box (Part No XNNN00666) must be used and connected to the DRIM installation in accordance with the drawing AA/F/10158 Sheet 3. (Supplied) The extension box should be mounted in a position where both actuators (Motors) can be wired into it. Should this not be possible, a second DRIM extension box will be required to extend one of the actuators cables.

Technical specification

- This equipment is for indoor use and will meet its performance figures within an ambient temperature range of -5°C to 50°C with maximum relative humidity of 80%.
- Equipment is for operation at installation category II (transient voltages) and pollution degree II in accordance with IEC 664 at altitudes up to 2000 metres.
- Size: - Overall maximum dimensions W 160mm X H 110mm X D 85mm
- Weight: - 210g
- Supply voltage: -

	DRIM set to operate at: -		
Nominal Voltage	24V	120V	230V
Nominal Voltage Range	21.6V to 28.4V	108V to 132V	207V to 253V

- Power consumption: - Internal dissipation <4VA – Maximum connected load not to exceed 30VA
- Degree of protection: - I.P. 45 (Cable glands I.P. 55)
- EMC: - Not applicable
- Low voltage directive: - CE compliant LVD meets EN 61010-1

Manufactured by: -

Ruskin Air Management (*Actionair*) Ltd
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CT5 3DU
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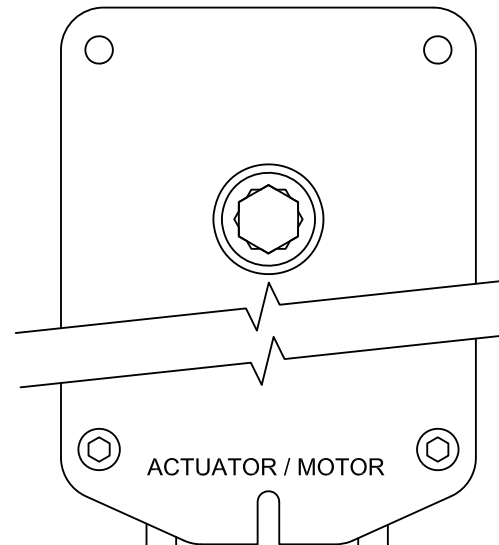
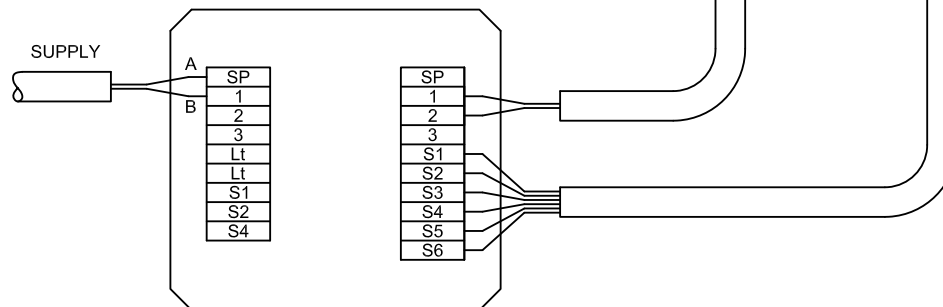
For technical assistance contact as above or your local Ruskin Air Management agent.

DAMPER RELEASE INDICATION MODULE (DRIM)
 CONNECTION DIAGRAM – SINGLE UNIT

Board Connection	Mode							
	Mode 6		120V		Mode 5		Mode 6 - 2P	Mode 5 - 2P
	240V ETR	240V non ETR	ETR	non ETR	24V ETR	24V non ETR	240V non ETR	240V non ETR
1	Blue/N	Blue/N	Blue/N	Blue/N	Black/-ve	Black/-ve	1	1
2	Brown/L	Brown/L	Brown/L	Brown/L	White/+ve	White/+ve	2	2
3	NC	NC	NC	NC	NC	NC	3	3
End switch connections								
S1	1	1	1	1	1	1	1	1
S2	2	2	2	2	2	2	2	2
S3	3	NC	3	NC	3	NC	NC	NC
S4	4	3	4	3	4	3	3	3
S5	5	NC	5	NC	5	NC	NC	NC
S6	6	4	6	4	6	4	4	4

NC = Not Connected

Supply cores	240V ac	120V ac	24V ac	24V dc
A	Live	Live	24 V	+ve
B	Neutral	Neutral	0V	-ve



Notes:

SHEET 1 OF 4

WARNING:
 SUPPLY TO BE VIA 3AMP
 FUSED SWITCHED SPUR.

Rev	Change	Dates
A	SHEETS 3 & 4 ADDED	11/10/2011

Drawn By S.W. 22/01/2008
 Checked By S.W. 11/10/2011
 Approved By J.H. 11/10/2011

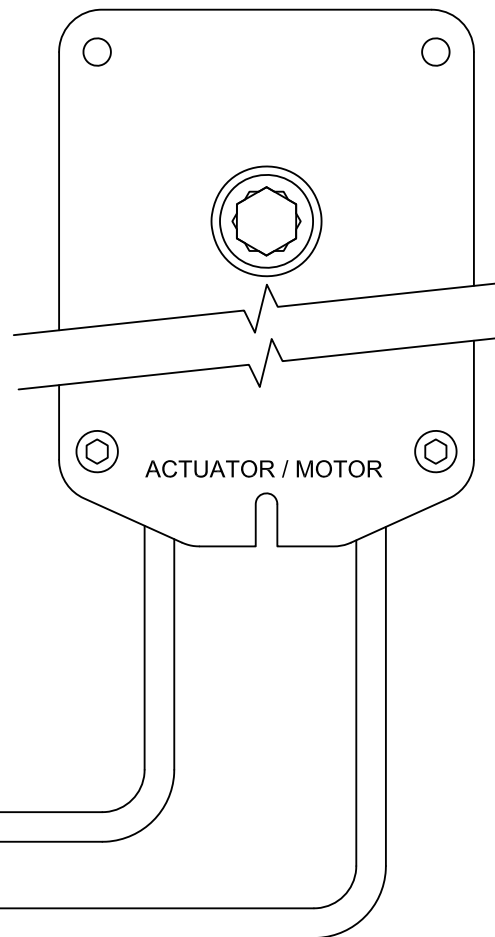
Customer
 Project
 Title
 DAMPER RELEASE INDICATION MODULE
 (DRIM) CONNECTION DIAGRAM SINGLE UNIT

Drawing No. AA/F/10158 Revision A

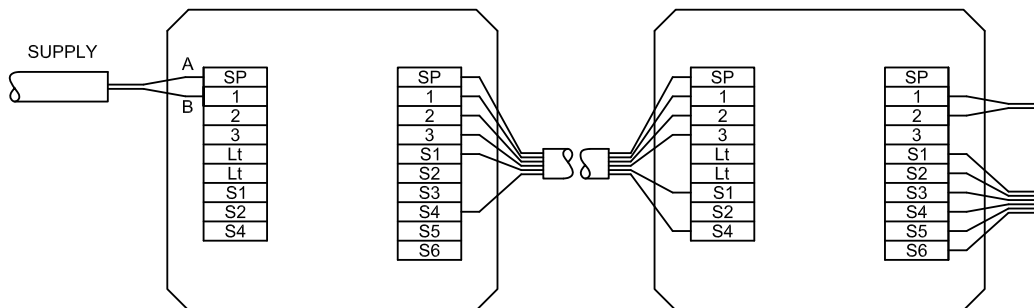
DAMPER RELEASE INDICATION MODULE (DRIM) CONNECTION DIAGRAM – 2 UNITS

Board Connection	Mode							
	Mode 6		Mode 5		Mode 6 - 2P	Mode 5 - 2P		
	240V ETR	240V non ETR	120V ETR	120V non ETR	24V ETR	24V non ETR	240V non ETR	240V non ETR
1	Blue/N	Blue/N	Blue/N	Blue/N	Black/-ve	Black/-ve	1	1
2	Brown/L	Brown/L	Brown/L	Brown/L	White/+ve	White/+ve	2	2
3	NC	NC	NC	NC	NC	NC	3	3
End switch connections								
S1	1	1	1	1	1	1	1	1
S2	2	2	2	2	2	2	2	2
S3	3	NC	3	NC	3	NC	NC	NC
S4	4	3	4	3	4	3	3	3
S5	5	NC	5	NC	5	NC	NC	NC
S6	6	4	6	4	6	4	4	4

NC = Not Connected



Supply cores	240V ac	120V ac	24V ac	24V dc
A	Line	Line	24 V	+ve
B	Neutral	Neutral	0V	-ve



Notes:

SHEET 2 OF 4

WARNING:
 SUPPLY TO BE VIA 3AMP
 FUSED SWITCHED SPUR.

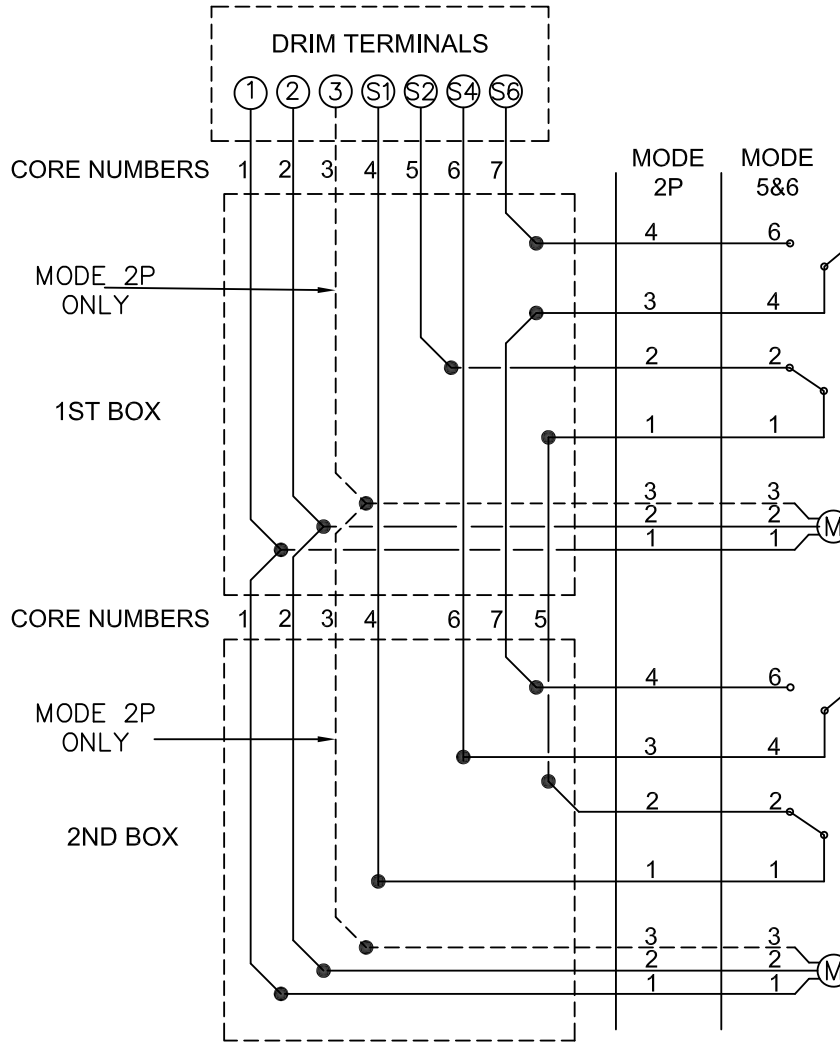
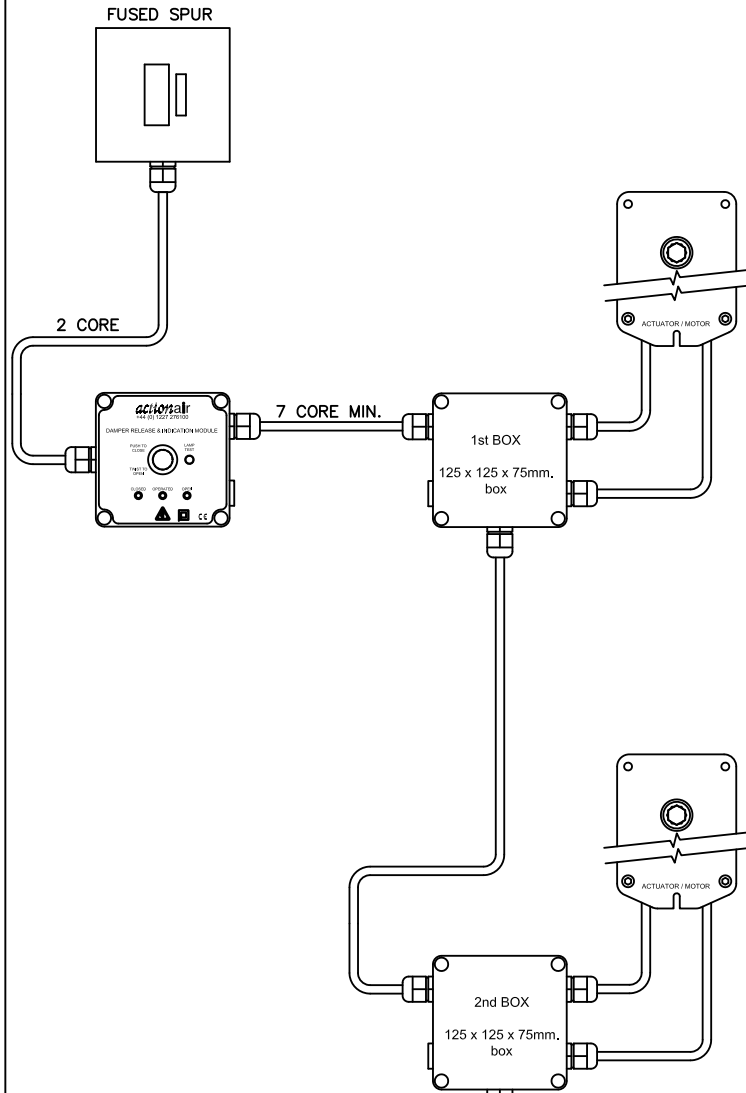
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Drawn By	S.W.	22/01/2008
Checked By	S.W.	11/10/2011
Approved By	J.H.	11/10/2011

Customer
 Project
 Title
 DAMPER RELEASE INDICATION MODULE (DRIM) CONNECTION DIAGRAM 2 UNITS

Drawing No. Revision

AA/F/10158

A



WIRING SCHEMATIC

Notes:

SHEET 3 OF 4

WARNING:
SUPPLY TO BE VIA 3AMP
FUSED SWITCHED SPUR.

CABLE TO BE 0.75mm. CSA TO
1.0mm. CSA

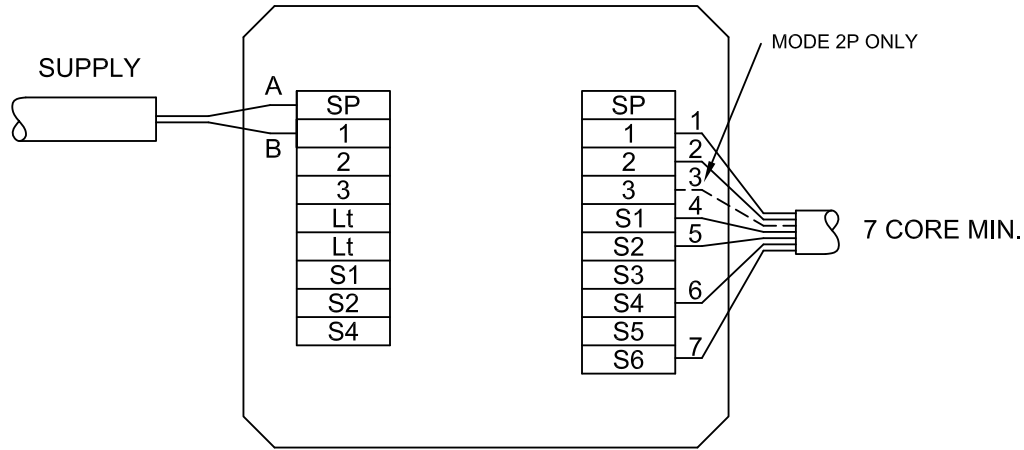
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	Drawn By S.W.	22/01/2008
	Checked By S.W.	11/10/2011
	Approved By J.H.	11/10/2011

Customer

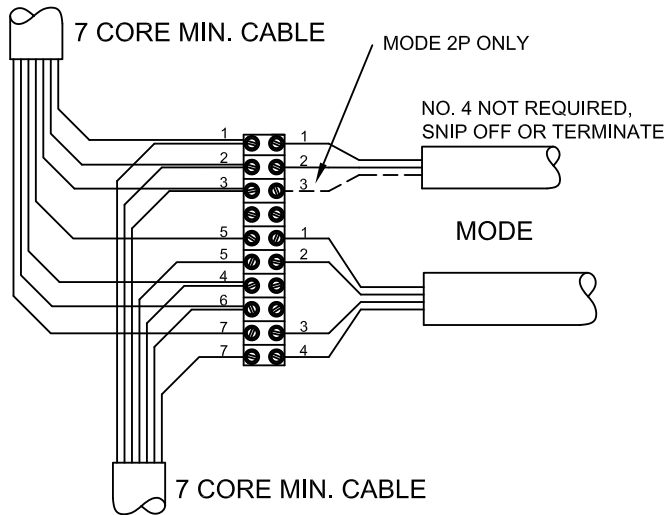
Project

Title
DAMPER RELEASE INDICATION MODULE
(DRIM) CONNECTION 2 MOTORS

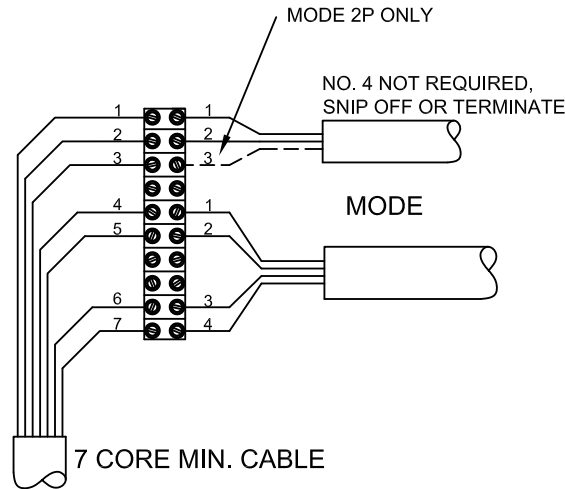
Drawing No. AA/F/10158 Revision A



DRIM CONNECTIONS



1ST BOX



2ND BOX

Notes:

SHEET 4 OF 4

WARNING:
 SUPPLY TO BE VIA 3AMP
 FUSED SWITCHED SPUR.

CABLE TO BE 0.75mm. CSA TO
 1.0mm. CSA

Rev	Change	Dates
A	SHEETS 3 & 4 ADDED	11/10/2011
Drawn By	S.W.	22/01/2008
Checked By	S.W.	11/10/2011
Approved By	J.H.	11/10/2011

Customer

Project

Title
 DAMPER RELEASE INDICATION MODULE
 (DRIM) CONNECTION 2 MOTORS

Drawing No. Revision