

PRODUCT MANUAL

FIXED TIME FATIGUE WARNING KIT

Part No. 9055



LEGAL NOTICE

1. You acknowledge that this document is protected under copyright law and Remote Control Technologies Pty Ltd or its related bodies corporate ("**RCT**") owns the copyright in this document or otherwise have permission or licence from the relevant owner to use certain specific works.
2. You must not make any changes, amendments, variations, alterations or modifications to the document.
3. You must not reproduce this document in any form or by any means, or to make copies of this document without RCT's prior written consent.
4. The contents in this document constitute confidential information of RCT. You must not circulate, distribute or otherwise allow the document to be available in the public domain, or to disclose or share the document with any third party, without RCT's prior written consent.
5. RCT provides the document to you on an "as is" basis. RCT is not required to provide any updates to this version of the document. RCT may make any change, amendment or modification to the contents in this document without notice to you.
6. RCT takes a best endeavour basis to ensure that the contents in this document are accurate, complete and reliable. RCT does not warrant that the document will continue to be reliable, relevant, accurate or complete due to RCT's continuous efforts in product development, innovation and technology.
7. Any trademarks used in this document belongs to RCT or is used under a licence. The trademarks are not to be used for any purposes, without RCT's prior written consent.
8. Any illustrations used in this document are for illustration purposes only. Illustrations are intended as aids to facilitate your understanding of the subject matter or issue.
9. RCT disclaims all liability, loss or damage that you suffer as a result of your reliance on this document.
10. By your conduct of using or reading this document, you agree to and accept the terms in this notice.

Contents

General Safety Warnings	4
Product Overview	5
Features and Functions	5
Operation and Use	6
Installation Guide	6
Wiring Connections	6
Diagrams	7
– External Wiring Diagram (382q)	7
– Loom Diagram (382l)	8
Service Information	9
Service Schedule	9
Service Procedure	9
Technical Specifications	9
Parts List	10
Compliance and Standards	10
Troubleshooting	10
Glossary	11
Warranty	11

General Safety Warnings

Personal Safety

- Everyone is responsible for safety.
- The installer/service personnel should be trained and authorized to complete the required work.
- Ensure that the machine is safely isolated during installation and testing to protect all personnel.
- Complete all required risk assessments and job safety analysis (JSA) before commencing work.
- Observe all site specific and machine OEM procedures regarding the following:
 - working at heights
 - working in heat
 - working in confined spaces
 - all other site specific occupational health and safety (OH&S) procedures

Machine

- Carry out all pre-start operations as per site and machine OEM procedures.
- Ensure the machine is safely isolated during installation and testing to protect the machine and other equipment in the area.
- Do not operate any machine with a known fault and report all findings to the supervisor in writing.
- Test and operate machine as per machine OEM and site procedures.
- Read and understand machine and site specific operational and testing instructions.

Product

Before applying power to the equipment, the user/repairer/installer must read all product instructions. If in doubt, seek assistance.

- Ensure electrical connections are made as per RCT's recommendations. Test circuits prior to connecting power to any component.
- The equipment contains no user serviceable parts inside. Return the unit to RCT for repairs.
- Retain product and installation instructions for future use.
- Ensure that RCT's recommended service procedures are included in the machine's service routine.
- Observe all machine, site and RCT product warnings.
- Follow all machine, site and RCT product operating procedures at all time.

The application of safety should not be limited to the above recommendations.

Product Overview



The Muirhead® Fixed time Fatigue Warning control kit, part number 9055, is a unique product that has been designed to monitor the operator's level of awareness.

The system gauges an operator's level of awareness by requesting a response to alerts generated by the system. It gauges the operator's level of awareness based on the response times to requests. If the system senses the operator is fatigued, it will activate appropriate alarms and warning devices. This is to provide a warning that the operator of the machine is fatigued and could possibly be putting themselves and other personnel in danger. Damage to machinery and surrounding equipment could also be imminent.

Features and Functions

- Multi-voltage
- Compact and robust design
- Environmentally sealed – IP65
- Audio and visual indicators

Operation and Use

The system becomes active as soon as the ignition is switched on.

The warning indicator will switch on after three minutes providing a visual indication to the operator that a response is required that involves toggling a reset switch. This operation must be performed within a set time-period to prevent more aggressive warnings.

If the device has requested a reset and the operator does not respond within 16 seconds, the warning alarm output will trigger and the visual indicator will begin to flash. If after another 14 seconds the operator still has not responded, the status/strobe output will trigger.

The warning alarm should be located in the cabin. Its function is to alert the operator to the fact that they have shown signs of fatigue.

The status strobe should be located outside the machine in view of other operators and personnel. Its function is to alert other personnel that the operator has shown signs of fatigue. Once this output has been triggered, it will remain on until the power is cycled to the device.

Installation Guide

1. Install the control unit in a suitable location in the cabin.
2. Locate the audible warning alarm, visual warning indicator and reset switch in the cab area near the operator.
3. Connect the wiring as per the external wiring diagram.

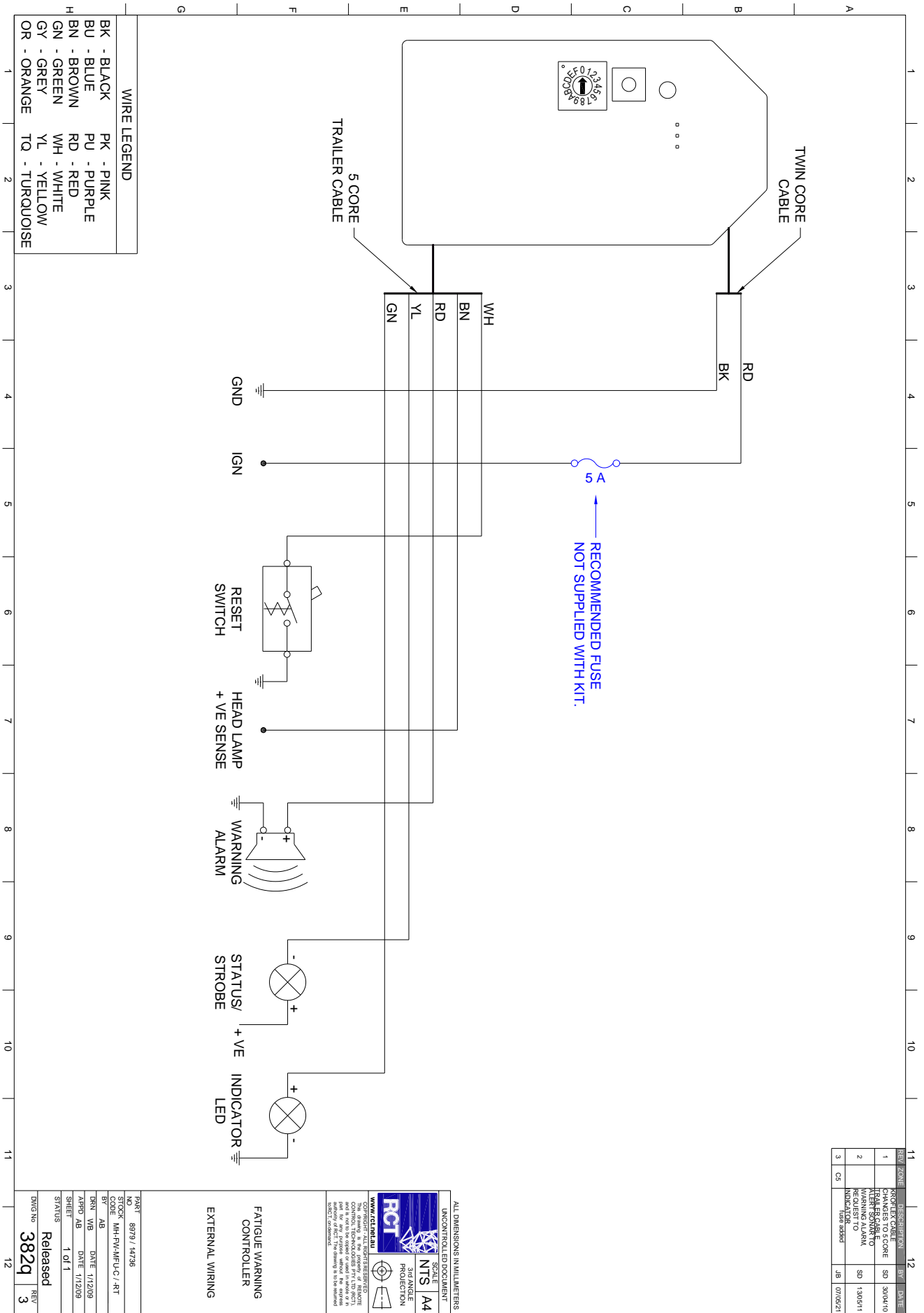
Wiring Connections

5-Core Trailer Cable	
White	Reset switch
Brown	Headlamp +ve sense
Red	Warning alarm
Yellow	Status strobe
Green	Visual warning indicator

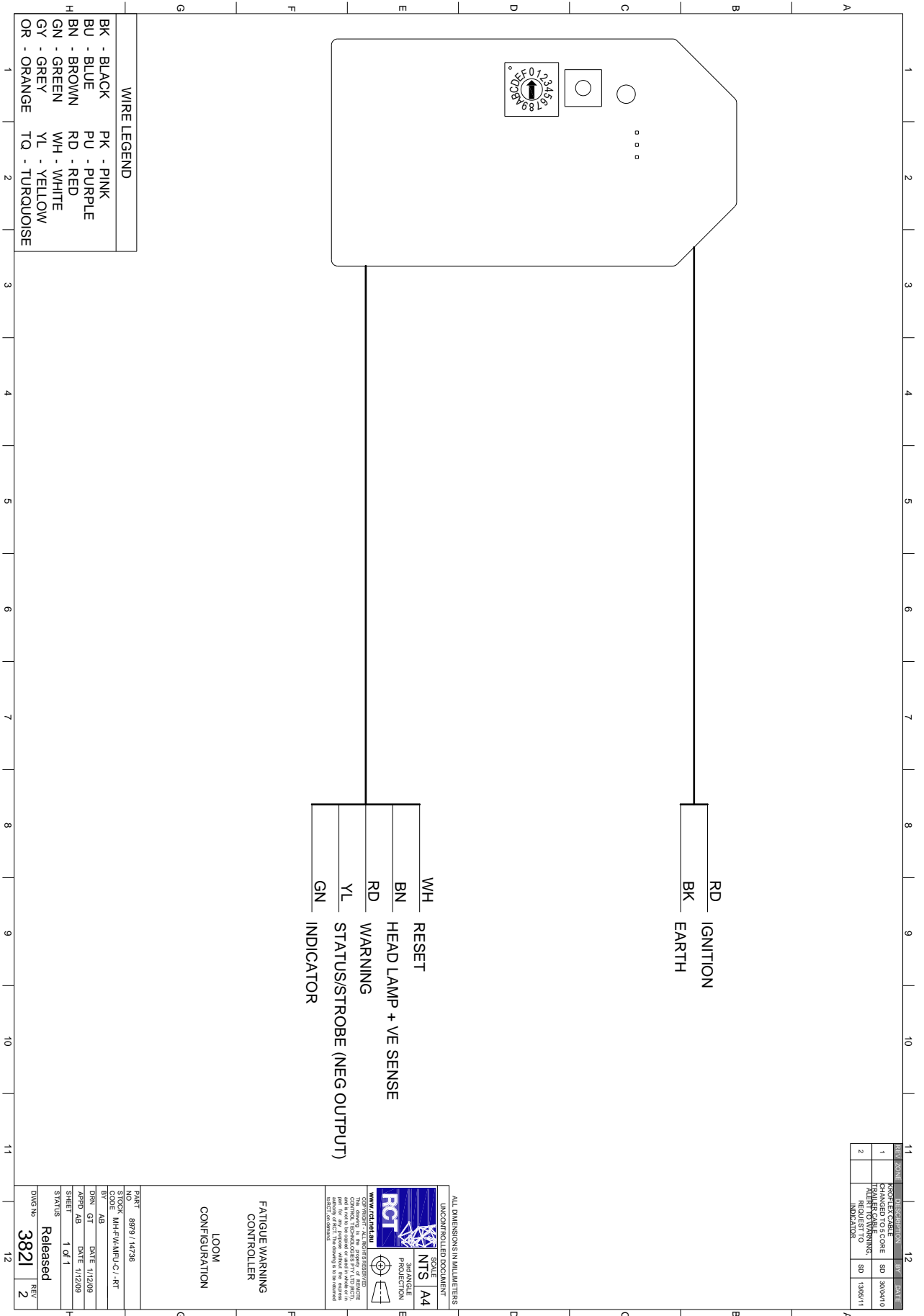
Twin Core Cable	
Red	Ignition supply
Black	Ground

Diagrams

External Wiring Diagram (382q)



Loom Diagram (382I)



Service Information

Service Schedule

The manufacturer recommends that the following service procedure should be performed at each machine's scheduled service interval.

Service Procedure

1. Perform a visual inspection; include the following:
 - a) Control unit.
 - b) Wiring connections and looms.
 - c) Check that all switches are in good working condition.
2. Perform a system test as per the following:
 - a) Refer to the *Operation and Use* section of this manual for instructions on the operation of each function, and checking the control unit for maintenance or repairs that may be required.

Technical Specifications

Dimensions, control unit only:	Length: 65 mm Width: 37 mm Height/Depth: 23 mm
Dimensions, boxed for freight:	Length: 100 mm Width: 50 mm Height/Depth: 50 mm
Weight, control unit only:	0.19 kg
Weight, including loom / packaging for freight:	0.25 kg
Input nominal voltage:	12 to 24 V
Operating temperate range:	0 to 70°C
Connection types:	Hard wired
Inputs:	Ignition, earth, reset
Min & max input voltage:	8 to 35 V
Enclosure type:	LCM
Environmental protection IP rating:	IP65

Parts List

Part No.	Description
8979	Fixed time fatigue warning controller
1723	Warning alarm
11109	Visual warning indicator
2058	Reset switch
3214	Boot to suit reset switch
9655	Warning alarm mount
8998	Fatigue warning label
6736	System reset label
0821	Terminals for indicator light
0824	Terminal for reset switch

Compliance and Standards

Not applicable.

Troubleshooting

Fault	Possible Cause
Device not working.	Check wiring and connections.
Intermittent fault.	Check wiring and connections.

Glossary

<i>A</i>	Amp (Ampere)
<i>AC</i>	Alternating Current
<i>AMS</i>	Advanced Management System
<i>Aux</i>	Auxiliary Output
<i>CAN</i>	Controller Area Network
<i>CMIO</i>	Control Master Input Output PCB
<i>CMR</i>	Control Master Receiver
<i>CMT</i>	Control Master Transmitter
<i>CM2200</i>	Control Master 2200 Remote Set
<i>COMMS</i>	Communications
<i>CPU</i>	Central Processor Unit
<i>DC</i>	Direct Current
<i>E.G.</i>	For example
<i>ETR</i>	Energised To Run
<i>ETS</i>	Energised To Stop
<i>ESD</i>	Engine Shutdown
<i>FET</i>	Field Effect Transistor
<i>GND</i>	Ground
<i>H</i>	Hours
<i>HEX</i>	Hexidecimal Numbering System
<i>ID</i>	Identity
<i>i.e</i>	That is
<i>In</i>	Input
<i>IP</i>	Ingress Protection
<i>kg</i>	Kilogram
<i>Km/h</i>	Kilometres Per Hour
<i>LCD</i>	Liquid Crystal Display
<i>LED</i>	Light Emitting Diode
<i>LK</i>	Link
<i>M</i>	Minutes
<i>mA</i>	Milli Amps
<i>MAX</i>	Maximum
<i>MCU</i>	Multi Control Unit
<i>MFU</i>	Multi Function Unit
<i>MHz</i>	Mega Hertz (million(s) cycles per second)
<i>MIN</i>	Minimum
<i>mm</i>	millimetres

<i>mW</i>	Milli Watts
<i>N/A</i>	Not Applicable
<i>N/C</i>	Normally Closed
<i>N/O</i>	Normally Open
<i>OEM</i>	Original Equipment Manufacturer
<i>O/P</i>	Outputs
<i>Out</i>	Output
<i>PB</i>	Push Button
<i>PC</i>	Personal Computer
<i>PCB</i>	Printed Circuit Board
<i>PIN</i>	Personal Identification Number
<i>PLC</i>	Programmable Logic Controller
<i>POT</i>	Potentiometer
<i>PPM</i>	Pulses Per Metre
<i>PWM</i>	Pulse Width Modulation
<i>PWR</i>	Power
<i>Rev</i>	Revision
<i>RF</i>	Radio Frequency
<i>RH</i>	Relative Humidity
<i>RPM</i>	Revolutions per minute
<i>RX</i>	Receiver
<i>RS232</i>	Recommended Standard (number 232) for serial data transfer
<i>Source</i>	The output can supply/drive current out
<i>SYS</i>	System
<i>TOV</i>	Text On Video
<i>TX</i>	Transmitter
<i>V</i>	Volts
<i>°C</i>	Degrees Centigrade
<i>#</i>	Number
<i><</i>	Less Than
<i>></i>	Greater Than
<i>%</i>	Percentage

Warranty

Please see the RCT standard warranty, available on our website - www.rct-global.com.



Discover more: www.rct-global.com

sales@rct-global.com

AUSTRALIA:	+61 (0) 8 9353 6577
AFRICA:	+27 (0) 83 292 4246
CANADA:	+1 705 590 4001
RUSSIA / CIS:	+7 (910) 411 11-74
SOUTH AMERICA:	+56 3 5229 9409
USA:	+1 801 938 9214

