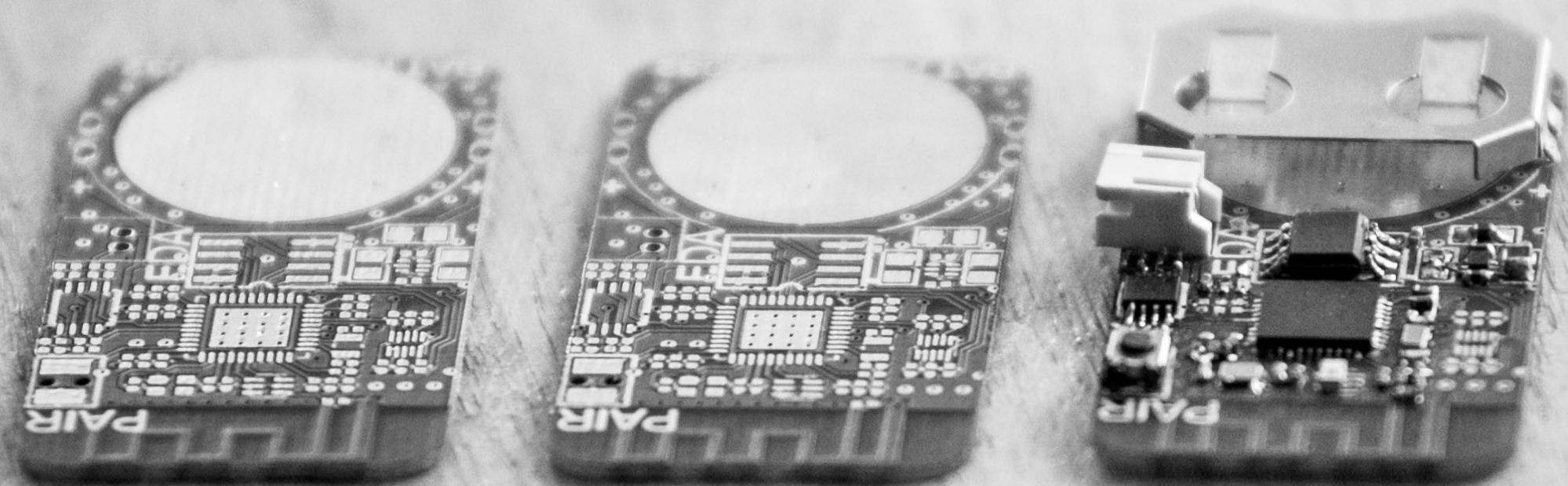




Electronics Engineering Design

PORTFOLIO



4Volts Engineering

Electronics Engineering Design Consultants in Melbourne.



Jim Honeyman
Engineering Manager



Roberto Zamorano
Senior Electronic Engineer



Erika Maccarinelli
Industrial&Web Designer

Jaimie Housman
Senior Industrial Designer

Huan Hoang
Senior Electronic Engineer





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PROFESSIONAL SPORT ELECTRONICS

Cricket Bail & Stumps

We've been developing the Cricket bails and stumps for the T20 since the season 2013-14.

Features

- . 2.4GHz Radio Link between stump & bails
- . Proprietary Master/Slave message protocol
- . Re-chargeable battery system
- . 1ms response time
- . LEDs visible at 100m
- . Single piece rigidised flex PCB

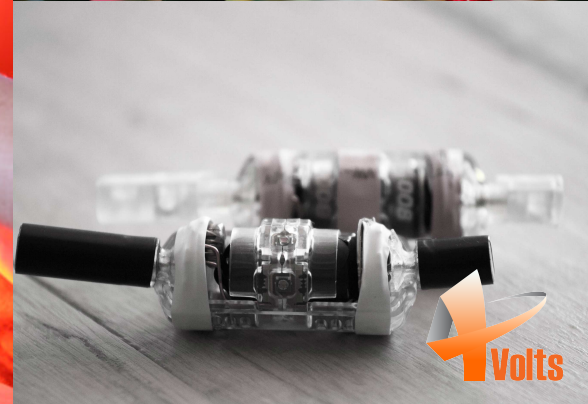
Development Complete

Deployed in the Australian T20 Big Bash League '13-'14

Deployed in the T20 Cricket World Cup 2014

Deployed in the T20 Cricket World Cup 2015

<http://zings.biz/>



ENERGY METERING ELECTRONICS

Energy Meter & Remote Internet Interface

Power metering and remote switching over 3G data Network.

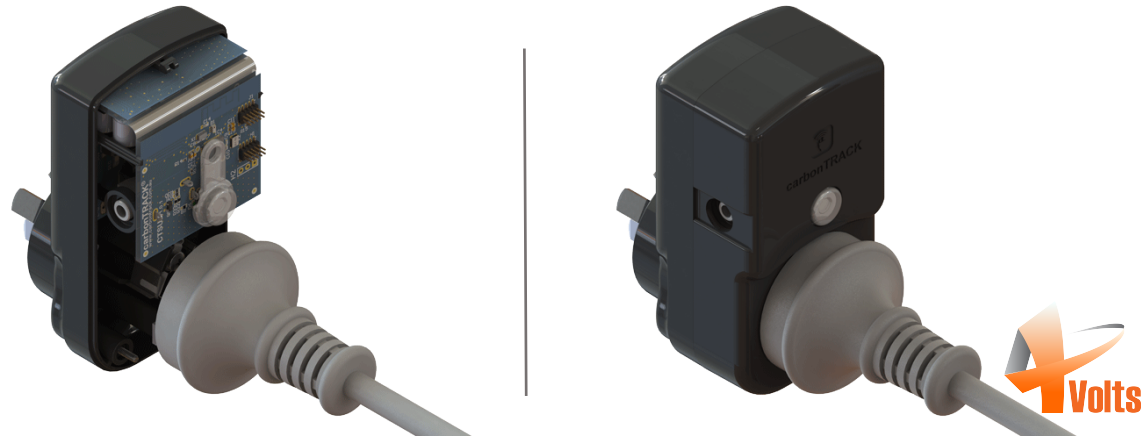
Features

- . Quad band GSM Modem real time monitoring & control
- . 3 Phase current monitoring
- . Solar array current monitoring
- . Li-ion battery backup
- . Remote Temperature monitoring
- . Remote Water Heater Control
- . Compliant to IEC 62053-21 International Standard for Electricity
- . Design, 3D modeling & rendering

Development Complete

Systems deployed commercially

<http://carbontrack.com.au/>



MEDICAL ELECTRONICS

Peak Flow Meter & Spirometer

Lung function performance measurement

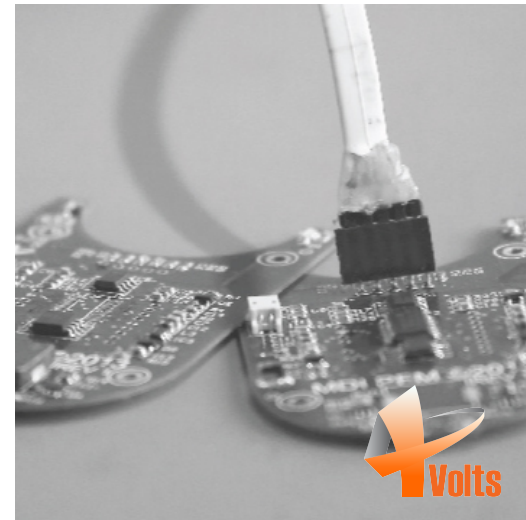
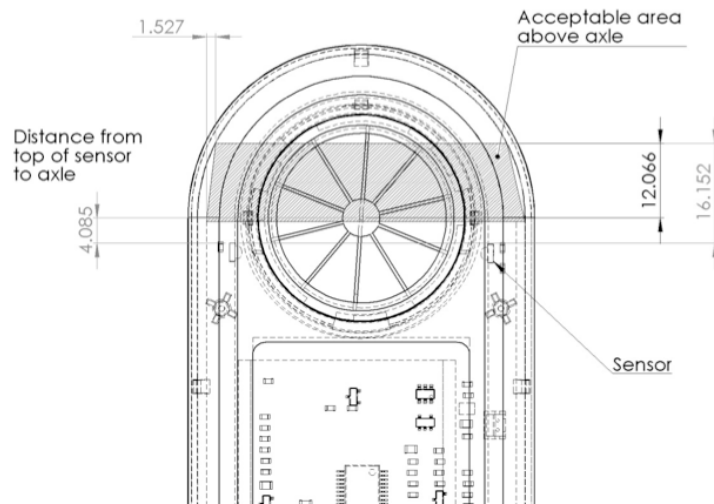
Features

- . Full colour graphic LCD Interface
- . Li-ion re-chargeable battery
- . USB data transfer
- . IR Reading of calibrated disposable turbine
- . FEV1 & FEV6 spirometry reporting
- . 1 Month operating time on a single charge

Development Stage

Awaiting TGA certification

<http://www.medicaldev.com/>



MILITARY ELECTRONICS

Rescue Services Portable ADSL Modem

Military device for remote connection

Features

- . Touchscreen LCD Interface
- . Multi-chemistry battery charging of Li-ion, LiFePo4 & SLA cells
- . AT Modem command & control interface
- . Cable fault location using time domain reflectometry.
- . SHDSL Line TC-PAM4/8/64/128 encoding
- . 8Km Maximum Range
- . Night vision auto-dimming display

Development Stage

Prototype(s) undergoing field trials

<http://www.defence-comms.org/>



CONSUMER ELECTRONICS

Autolight

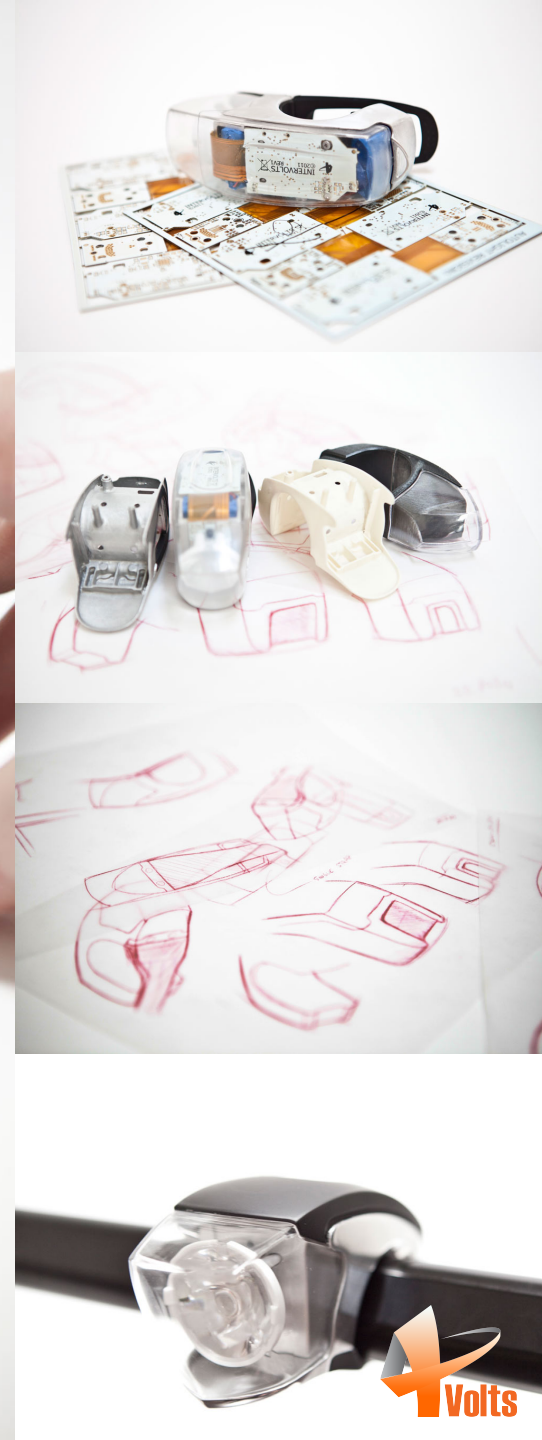
Commuter Bicycle Accessory

Features

- . Touch capacitance user interface
- . 3 Axis motion sensing
- . Ambient light sensing
- . Lithium battery charging
- . USB Interface for user configuration
- . Power metering for configurable run time
- . Variable light output
- . Lightweight aluminium housing & optical grade acrylic
- . Silicon rubber mount & release strap

Development Stage

Complete



TESTING ELECTRONICS

Electronic Stability Control Test & Calibration

Industrial fixture

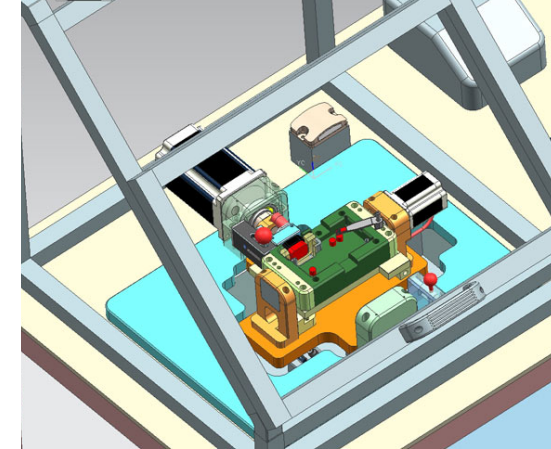
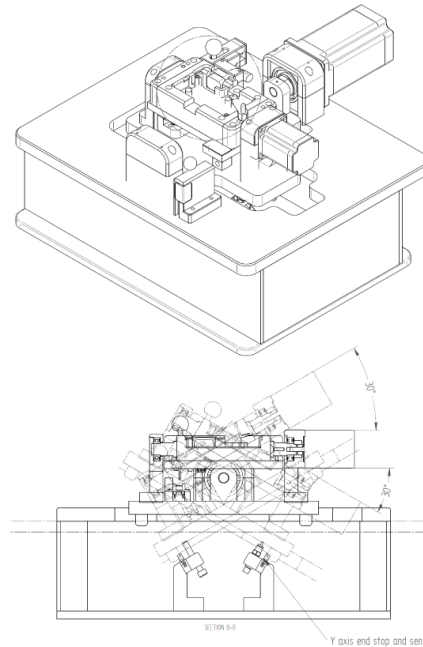
Features

- . PC based Labview application
- . LIN bus communication with vehicle module
- . Step motor control of X & Y axes tilt bed
- . Infra-red temperature reading and calibration
- . Brake coil voltage & current calibration

Development Stage

Commissioned & operating on site

<http://www.alko.com.au/>



AL-KO ESC Test Fixture

● Ready to test

● Initialising

● Calibrate temp sensors

● Calibrate X-axis

● Configure settings

● Swerve test

● Oscillation test

● Results

1. Insert PCB, connect and clamp.

2. Unlock table and close hood.

3. Press start button.

SERIAL NUMBER

TRAILER WEIGHT 1000

AXLE COUNT 1

BRAKE SIZE 10 INCH

CHANGE SETTINGS

● HOOD CLOSED

● AXIS LOCK

● CONNECTOR CLAMP

● ESC LED

AL-KO ESC Test Fixture

● Ready to test

● Initialising

● Calibrate temp sensors

● Calibrate X-axis

● Configure settings

● Swerve test

● Oscillation test

● Results

PASS

SERIAL NUMBER JAABCCDD

TRAILER WEIGHT 1000

AXLE COUNT 1

BRAKE SIZE 10 INCH

● HOOD CLOSED

● AXIS LOCK

● CONNECTOR CLAMP

● ESC LED

AL-KO ESC Test Fixture

● Ready to test

● Initialising

● Calibrate temp sensors

● Calibrate X-axis

● Configure settings

● Swerve test

● Oscillation test

● Results

REJECT

FAILED SWEVE TEST

SERIAL NUMBER JAABCCDD

TRAILER WEIGHT 1000

AXLE COUNT 1

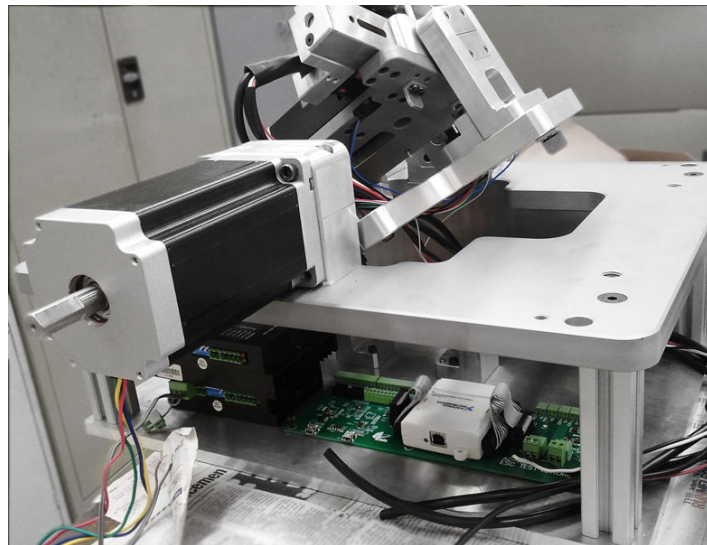
BRAKE SIZE 10 INCH

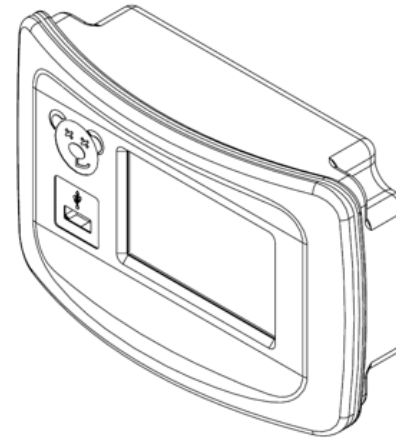
● HOOD CLOSED

● AXIS LOCK

● CONNECTOR CLAMP

● ESC LED





CONSUMER ELECTRONICS

Brew Process Controller

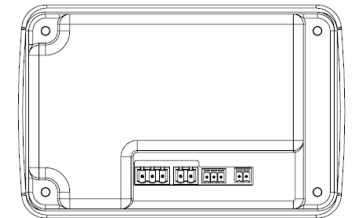
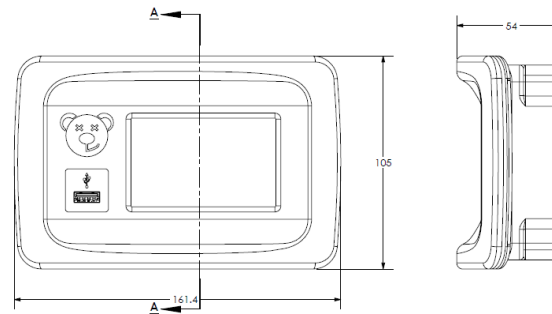
Control unit & interface for home brewing

Features

- . LCD Touchscreen User Interface
- . USB Mass Storage Device Interface for XML recipe input
- . 90-240VAC 2KW Closed Loop Heater
- . 90-240VAC Pump Soft start & speed control
- . Variable phase TRIAC heater control
- . PT100 Temperature sensing with calibration

Development Stage

Beta prototype submitted for compliance certification



AUTOMATED TESTING ELECTRONICS

LPG

Automated Test Fixture(s)

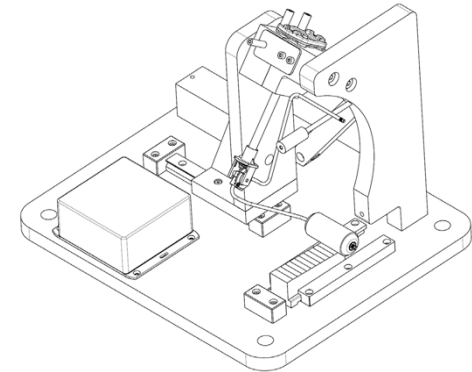
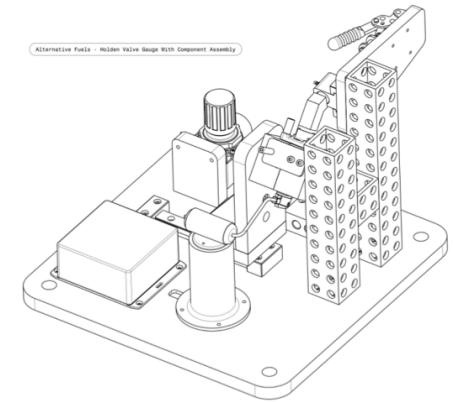
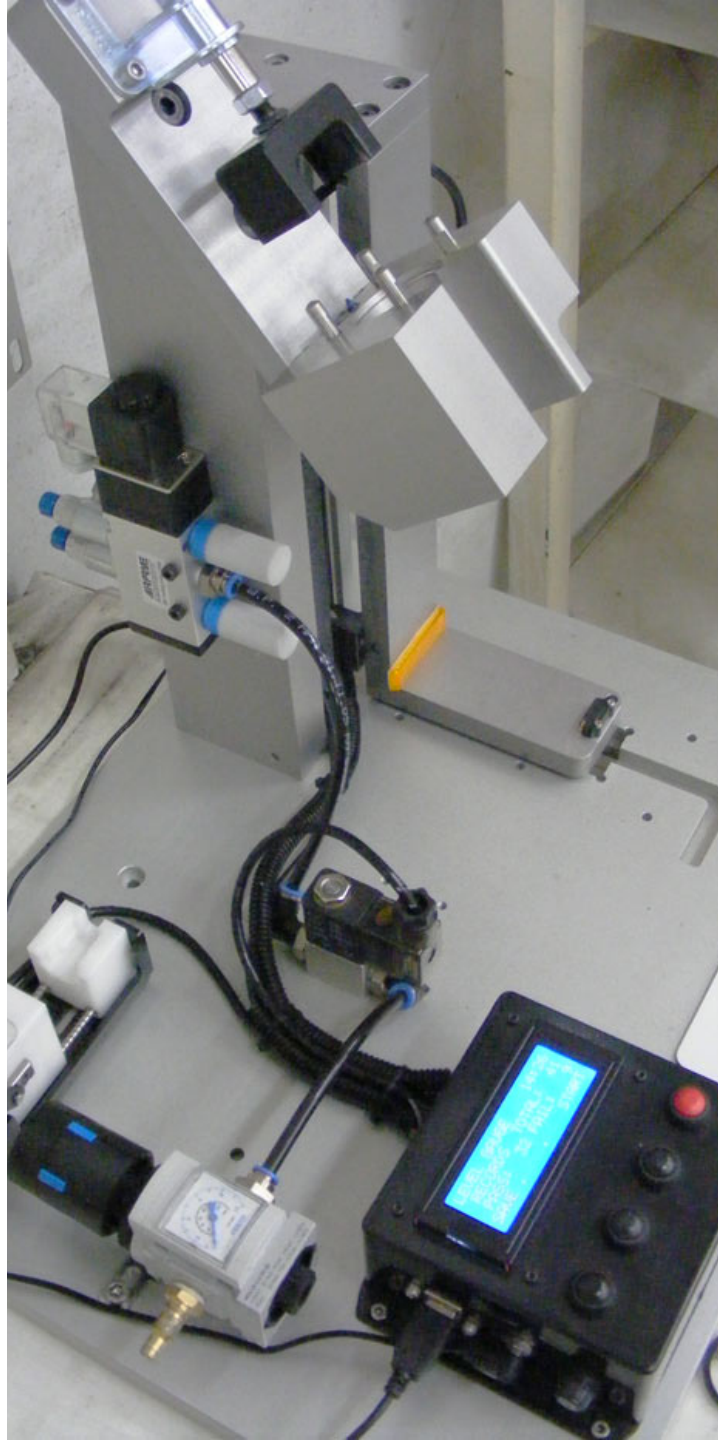
Industrial fixture

Features

- . LCD Interface
- . USB Mass Storage Device & HID Keyboard Interface
- . USB Barcode Reader
- . USB test data logging & retrieval
- . pneumatic actuator system
- . Step motor linear actuator drive system
- . Magnetic Linear Encoder
- . 300PSI Pressure Sensing

Development Stage

Commissioned & operating on site



| | |
|----------|-----------|
| AFL TEST | 14:26 |
| RECORDS | TOTAL: 87 |
| PASS: 70 | FAIL: 17 |
| SAVE . | START |

SECURITY ELECTRONICS

Learning Remote Control

Commercial RF Remote Control

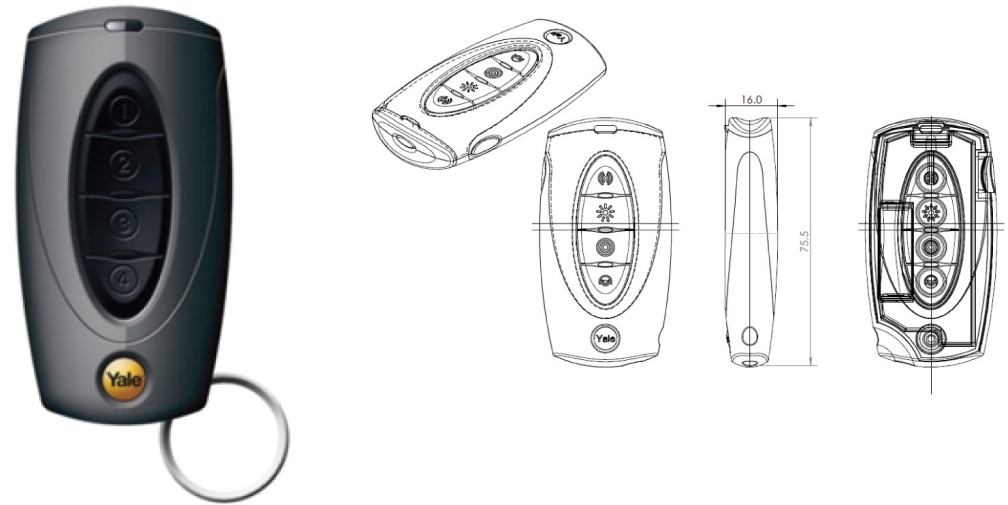
Features

- . 433/868/915MHz RF Transmitter discreet component design
- . 433/868/915MHz RF Receiver discreet component design
- . Rolling code cryptography
- . Multi-protocol remote cloning
- . 1 to 4 buttons configurable with silicon inserts
- . Battery status indication
- . Code learning success/failure indication
- . 2 Year battery life
- . 100m Range
- . Test fixture for production & test
- . Compliance certified to FCC/CE/C-Tick/ICASA

Development Stage

- . Annual production in excess of 50K pieces
- . Retailing in South Africa & UK

<http://www.yalesecuritypoint.co.za/c97/Learning-Remotes.aspx>





For all your electronics needs

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