



THERE IS MORE TO BEING ON TRACK
THERE IS ACTOM



- Electronic Interlocking, Automatic Train Protection and Centralised Train Control Systems
- Signalling equipment, systems and maintenance
- Rolling stock equipment, services and parts
- Anti-vibration products and solutions

TRANSPORT
A division of ACTOM (Pty) Ltd

ACTOM

ACTOM Transport

ACTOM Transport has a comprehensive turnkey capability in the fields of railway automation, signalling and control systems and traction equipment systems and components.

It is a business unit within the Engineering Projects and Contracts division of ACTOM (Pty) Ltd.

ACTOM (Pty) Ltd is the largest manufacturer, solution provider, repairer and distributor of electro-mechanical equipment in Africa, offering a winning and balanced combination of manufacturing, service, repairs, maintenance, projects and distribution through its 40 outlets throughout Southern Africa.

ACTOM is also a major local supplier of electrical equipment, services and balance of plant to the renewable energy projects. It also holds numerous technology, distribution and value added reseller agreements with various partners, both locally and internationally.

ACTOM is a level 1 BBBEE rated company.

ACTOM Transport comprises of three subunits:

- ACTOM Signalling, leading players in the Southern African market in the fields of railway automation, signalling and control systems, with a comprehensive turnkey capability and an extensive range of products.
- ACTOM Transport Equipment & Projects (TEP), a contractor and supplier of rolling stock equipment, parts and maintenance services.

- ARNOT Vibration Solutions, suppliers of anti-vibration products and solutions.

ACTOM Signalling

ACTOM Signalling designs, manufactures, installs and maintains railway signalling equipment and turnkey systems covering train control, track side equipment, interlocking, train detection, automatic train routing and train management information.

Our core capabilities include:

- Planning and design skills including the following:
 - Free wired interlocking
 - Relay interlocking
 - Geographical interlocking
 - Electronic Interlocking
 - Remote control systems
 - Signalling and monitoring products
 - Train Control and management information systems

- Research and Development
- Manufacture of signalling product
- Testing and commissioning
- Product Support
- Refurbishment/repair of products
- Signalling Maintenance
- Project Management
- Turnkey railway signalling projects.

ACTOM Transport Equipment & Projects (TEP)

ACTOM Transport Equipment and Projects is a contractor and supplier of rolling stock equipment, parts and maintenance services. They also provide specialized depot assembly and test equipment such as wheel presses, bogie drop machinery, bogie and test equipment and power supplies through their representation in Southern Africa of BBM and IRMIE Impianti of Italy.

ARNOT Vibration Solutions (AVS)

AVS is a local manufacturer, supplier and distributor of components designed for and used in mechanical engineered suspension systems and anti-vibration applications in the rail industry.

1. Signals & Points Equipment

1.1 Plastic Light Units

1.1.1 Route/shunt Signal Unit



The light unit housing is manufactured from a rugged high impact resistant plastic material specifically UV resistant. The lamp unit is equipped to take a lamp rated at 110v 25W and fitted with a 3-pin cap to BS Specification 469:1960 (lamp ref. SL33).te/shunt signal unit.

1.1.2 LED Cluster Signal Unit



The LED consists of four individual LED chips in one integrated circuit. The LED's are arranged into two strings of two LED's each.

The colour temperature of the LED is between 2600 and 3600 degrees Kelvin. This conforms to the colour temperature of a tungsten filament lamp. The cluster shall operate from 9 Volt DC to 12 Volt DC when used with iVPI electronic interlocking.

The cluster operates from 9 Volt AC to 14 Volt AC when used with Spoorplan Mk1, Mk1a, Mk1b, Mk1c, HR92, HR97 and electronic interlockings. The cluster is visible at the distance of 800 m.

1.2 Points Units & Equipment

1.2.1 Self Normalising Trailable Cylinder & Mechanical Points Indicator



Incorporated in the design is an internal, easily adjustable time delay mechanism whereby the normalising action can be pre-set over a wide range of time settings. The trailable cylinder is a hydro/mechanical device and requires no electric power. The trailable cylinder's mounting arrangement is on a steel cradle, fixed on two sleepers. The cylinder has overall compact dimensions and can be conveniently handled in the field.

The mechanical point's indicator is designed to meet the demands for safety and reliability of Railway signalling equipment in a crossing loop situation.

With the exception of on condition inspection cycles, the mechanism is maintenance free.

1.2.2 Style C1H MKII Points Machine



The style C1 H MkII (electro-hydraulic) points machine was designed to provide positive locking of the blades along with the function of trailability. Designed and manufactured in South Africa, it is jointly owned by ACTOM Signalling and our client.

1.2.3 Switchmatic B1



The Switchmatic B1 points machine meets the general requirements of BS specification 581 and SATS no CSE 17A.

Applications

- Operates switches whether or not a drive to the heel is required.
- Operates a moveable frog and derailer.
- Operates switches that require a separate drive to a facing point lock and detector.

2. Train Detection

2.1 Jeumont Track Circuits



Transmitter: The transmitter generates impulses with a given shape, amplitude and recurrence frequency which is then injected into the track by means of a matching isolating transformer.

Receiver: The receiver detects at the other end of the track section, the specific signal and if this is of the correct positive and negative amplitude, energises the fall-safe relay. Whenever the specific signal is not received, deformed or too weak, the fall-safe relay is de-energised. Impulses are delivered by the transmitter on the basis of capacitor discharges controlled by a thyristor in recurrent intervals.

These discharges are injected via a circuit which includes the primary of the matching transformer, into the track.

2.2 AZLM Axle Counter



The AZLM axle counter consists of a two out of two failsafe systems.

Each half of the system evaluates the count information and based on the result produces the track free information to be used by the interlocking.

Two relay outputs are available on the parallel card:

Channel A is a GF relay output indicating that the section is unoccupied (Gleis Frei).

Channel B can be a GF relay output indicating that the section is unoccupied (Gleis Frei) or a GB relay output indicating that the section is occupied (Gleis Belegt). As shown the connection is configurable with a wire or fibre link.

Depending on the interlocking application, both channels will provide a GF – GF output, or a GF – GB output. The parallel cards used in most applications are all configured to be of the GF-GF type.

3. VITAL 21 FSDT



The main task of VITAL 21 is the data transmission according to [EN 50159-1] of digital information (VITAL 21 data) between two locations A and B. In order to save transmission wires VITAL 21 is able to transit data of 1 or 2 detection points Zp30H to a centralized evaluation unit ACE (axle counter Az LM) using the same transmission path.

The VITAL 21 system is composed of two VITAL 21 input/output units (VIOU) and placed at two different locations (A and B, e.g. interlocking 1 and 2). The VIOUs communicate via ISDN.

Each VIOU is housed in a 19" sub-rack with 6 HE.

Each VIOU consists of:

- one power supply board 60V/ 5V /15V(SV, with two channels)
- 1...4 digital input/output boards (I/O-Controller, IOC, with two channels) for input/output of digital information
- one ISDN modem board (MB), transmitting digital information and detection point data (if required) via ISDN (VITAL 21 messages).

4. Interlocking Systems

4.1 iVPI Electronic Interlocking



ACTOM is extremely excited to introduce its iVPI, the New Standard for Interlocking and Block Signalling. The "i" represents the high degree of technological integration this solution offers.

iVPI contains all required local emergency control and communication interfaces for CTC as well as train detection for local and approach track circuits, including cab signalling.

4.2 Hybrid Relay Interlocking



ACTOM has the facilities to manufacture, refurbish or upgrade any type of geographical interlocking system currently in use on any railway in the world.

Geographical interlocking

- HR92 interlocking
- HR97 interlocking
- HR(S) interlocking

5. Remote Control Systems



ACTOM Signalling has extensive expertise regarding central traffic control (CTC) systems and boasts a development, support and installation history dating back to 1959. Its control systems are operational in various centres throughout Southern Africa.

The system includes:

- Remote control and carrier systems
- Train describer systems
- Automatic route calling systems
- Management information systems
- Passenger information sub-systems

6. Yard Automation



ACTOM's Yard Automation System can be categorised into three major sections:

Trackside control

- Points machines
- Vacancy detection (Wheel counter)
- Turnout Indicator
- Object controller

Communication

- Multi mode glass fibre backbone
- Ethernet network

Control

- Local Control Panel
- Yard Master Overview with CS90 remote control.

7. Level Crossing



The half-arm barrier is a level crossing protection system. It alerts, warns and stops road users before they can enter a level crossing soon to be occupied by an approaching train.

LED Traffic Light Modules 12-24 Vdc Radar Sensors for detecting moving and stationary objects.

Condition Monitoring (PLC Data Log) Barriers, Stand alone or incorporated into control system e.g Railway Signalling Interlocking, etc.

8. ARNOT



With more than 40 years history in the anti-vibration industry and its in-house design & engineering capabilities, ARNOT Vibration Solutions provides support for and finds solutions for their customers.

ARNOT Vibration Solutions distributes products from

approved overseas suppliers with whom there are established relationships, but also designs, manufactures and supplies products locally in South Africa to the Rail Industry.

The customers that ARNOT Vibration Solutions is involved with and supply to are the local manufacturers of rolling stock, South African and West & East African railways.

9. BBM



TEP represents BBM of Italy for specialised products such as wheel presses, bogie drop machines and bogie test equipment. Recent installations include six wheel presses in various depots in South Africa.

www.bbm.it

10. IRMIE Impianti



TEP also represents IRMIE Impianti of Italy, which specialises in depot testing and other rolling stock related electrical test equipment, depot assembly and test equipment.

www.irmieimpianti.com

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