

**FALCO®**Automatic Level Crossing
by GPS, Energy Independent**KEY FEATURE**Operational
Signalling and Safety
At Level Crossings**Automatic and
Autonomous**

FALCO® is an automatic and autonomous level crossing (LC) aiming at improving operational safety. The functioning of the barriers (opening/closing, sound and light alarm) is activated when trains are approaching. It is remotely controlled and can be monitored from the Central Traffic Control Office. Train drivers are informed of the status of the next level crossing via the driver display console. **FALCO®** works with the same technology as our **TAWS®** (Train Approaching Warning System).

Main Features**FALCO®** is composed of :

- Reinforced cabinet for signaling, telecontrol and energy management, equipped with:
 - Road and rail signs (according to local specifications)
 - Autonomous power supply with batteries and solar panels (or optional 110-240 volt mains)
 - Intelligent logic and telecommunication interfaces
- Single or double robust barrier mechanisms with:
 - Motorization, electronic control logic and several locking and safety/security devices
 - Booms in reinforced aluminum
 - Road signs (according to specifications)
- Central monitoring software for real time positioning of locomotives and status monitoring of all level crossings
- Specific software for the loco driver using his DMI/HMI display or a standalone Android device (smartphone/tablet/etc.)
- GPS tracker and Data Communications devices on board each locomotive (GPRS and satellite modem are standard, Tetra and VHF are optional)

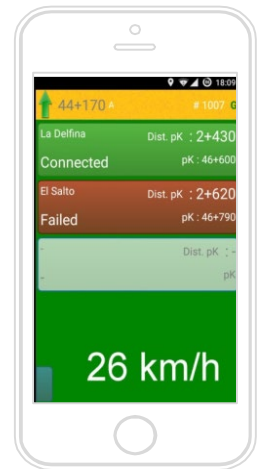
Technical Specifications**FALCO®** pole main components:

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|----------------------|--|
| Barriers | <ul style="list-style-type: none"> - Electromechanical group with asynchronous engine and electromagnetic brakes. - Automatic barrier opening in case of power failure - Various arms lengths (up to 6 meters) - IP44 & MTBF 1,250,000 cycles - Several Safety/Security options |
| Signalling | <ul style="list-style-type: none"> - Class1 360° Super-LED flashing beacon - Adjustable high-output siren - Flashing light on the barriers |
| Telecoms | <ul style="list-style-type: none"> - Satellite Modem - Intelligent Communication Terminal |
| Circuit board | <ul style="list-style-type: none"> - Microcontroller-based local intelligence with resilient logic firmware |
| Batteries | <ul style="list-style-type: none"> - 12 volt 90Ah dry fit solar batteries |
| Security | <ul style="list-style-type: none"> - Anti-theft, anti-vandalism sensors and devices |

Main Characteristics

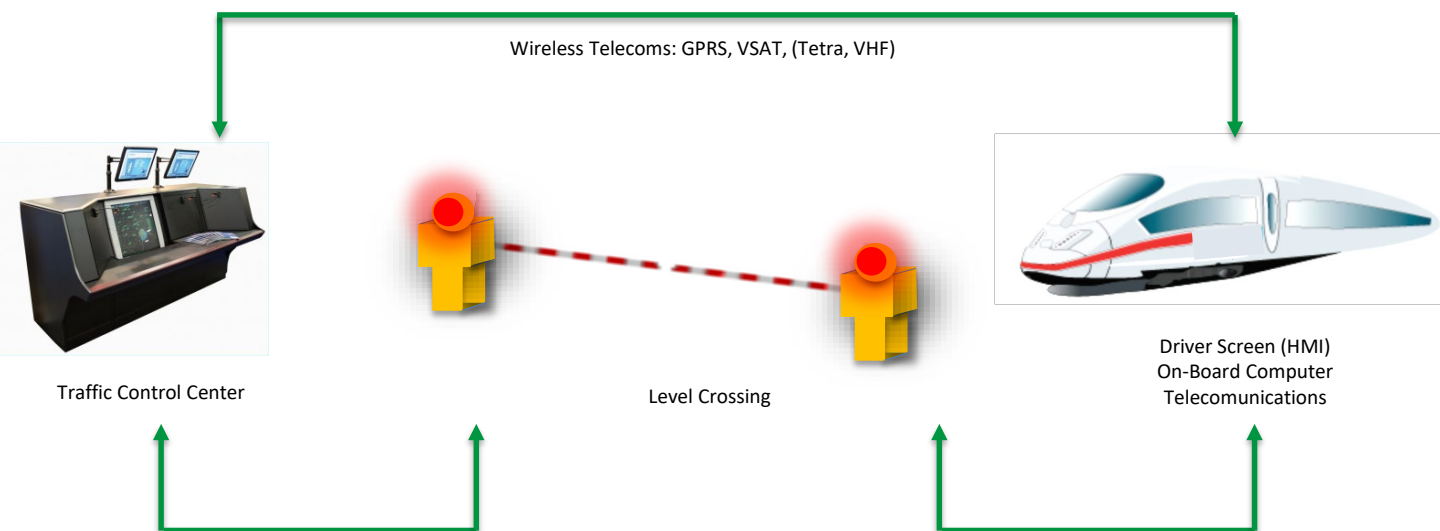
FALCO® has been designed to meet challenging operating conditions:

- **State-Of-The-Art** technology
- **Autonomous:** fully automatic operations, self-diagnostic features, no external cables
- **Strategic:** providing critical warning signals to enhance operational safety
- **Customizable:** flexible system; the user can modify the activation distance, the frequency and the light & sound intensity; this can be adapted to specific locations, rural or urban, with schedules and specified accesses according to the local context.
- **Security:** the train "license to move" can be conditioned by the information received from **FALCO®** on the level crossing operational status
- **Wireless Telecommunications**
- **Remotely monitored**
- **Robust:** anti-theft design, onboard technology and remote monitoring limit the need for theft-prone track side equipment
- **Low Energy consumption:** main or back-up power supply by solar energy and batteries
- **Innovative:** remote control of local intelligent logic, individual customization of each level crossing according to the local topography
- **Connectivity:** may be interfaced with other operational systems such as:
 - Centralized Traffic Control Office (COTRAF)
 - Others On-Board Computers
 - "License to move" Train Control System ("TCS")



Driver Smartphone/HMI showing next FALCO® LCs and their status

Concept



FALCO®

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FALCO® has been designed by FUTURE RESOURCES sa, a Belgian company developing innovative and cost effective solutions. FALCO® was developed in collaboration with high-tech railway engineering partners, operating small and medium size railways mainly in Africa and South America.

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