



**Industrial Batteries (UK) Limited**

*Main distributor of Alcad Ni-Cd Batteries in the UK and suppliers of Battery Support Services*

## **Application Note No. 6**

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# **Batteries for Signals And Signs Rail and Road Networks, Airports and Harbours**

Signals and signs are an essential requirement for any transport system. They are required because there is a need to provide information to the user to ensure that safe operation is obtained. Each signal and sign has its own specific purpose and method of communicating information.

However, organising traffic of all types have the same well-established purpose. That is to control priorities and rights-of-way to ensure that different users do not move into a dangerous situation.

The signal systems of today are becoming increasingly all electronic. Cabinet filled with vital and non-vital relays have been replaced by microprocessors with an output device, such as a relay, to isolate and support the signal device current.

However, the application requires the highest reliability for passenger and network safety, for good traffic control and to provide essential system management information. Critically, as with all modern control systems, this requires an electrical supply and failure of this is of critical importance regarding the safety of the system.

In this situation it is expected that there should be a battery back-up system installed to support the system in the event of failure of the normal mains power supply.

In huts and cabinets along the railway track, transport highways, airports and harbours, standby batteries are used in signalling systems such as:



- Crossings (Rail and Road)
- Track safety (Rail)
- Emergency backup (all )
- Communication (all )
- Remote monitoring and control (all )
- Information (all )
- Warning Signs (all )
- Direction Signs (all)

The application requires the highest reliability for passenger and network safety, for good traffic control and to provide essential system management information.

As many of the systems are in outdoor environments, such as huts or cabinets, tolerance of wide temperature variations is required. There is therefore a requirement for an excellent life even at high temperatures and a superior low temperature performance.

Coupled with high reliability/safety requirements the need for a low maintenance cost is always a key point. This means no sudden failures, infrequent maintenance and a long and predictable lifetime

These standby batteries may be supported by a mains supply (continuous or intermittent) or may be recharged using small solar panels or wind generators.

The requirements for a reliable and successful signalling system are as follows:

- Highest possible reliability
- Safe operation to prevent collisions
- Reliable control to ensure good traffic management
- Trustworthy information about safety and control.
- Wide temperature range for outdoor applications in huts or cabinets
- Good life even at high temperatures
- Good low temperature performance
- Low maintenance cost with minimum maintenance frequency.
- No sudden failures and a predictable lifetime

**Nickel-Cadmium offers the following advantages to ensure complete system reliability and security.**

- ✓ Ni-Cd offers complete reliability with lifetimes in excess of 20 years
- ✓ Ni-Cd has a high lifetime independent of performance.
- ✓ Ni-Cd has a simple and infrequent maintenance requirement.
- ✓ Ni-Cd lifetimes at elevated temperature are degraded far less than lead acid and it has a superior low temperature performance.
- ✓ Ni-Cd has no frequent battery replacements due to long lifetime and reliability
- ✓ Ni-Cd performance can be optimised for the duty cycle.
- ✓ Ni-Cd cycling ability is well within the requirements of the application.
- ✓ Ni-Cd high reliability and low operating costs make it a truly cost effective solution.

**The Vantex Battery Ranges for signalling and information systems.**

IBLUK supply premium quality Alcad industrial nickel-cadmium batteries.

Our range of batteries suitable for this application include:



- **Vantex** - A new concept in Nickel-Cadmium batteries.
- This high-technology, low-maintenance' design ensures a very high level of gas recombination and very low gas emission levels without the need for a pressure vent.
- The advanced battery conception means that the Vantex battery gives all the advantages of conventional open cells with the convenience of the Vantage ultra-low maintenance technology.

### **IBLUK Support**

Industrial Batteries (UK) Limited has been serving the industrial battery market in the United Kingdom since 1997 and specialises in nickel-cadmium industrial battery supply and support.

We will size the optimum battery for your application from our extensive ranges, provide battery layouts, supply battery stands where required and help you to choose the most cost effective solution.

We also provide battery training, maintenance equipment, accessories and support services. Please do not hesitate to contact us.

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