



Parametricoder™ Time and Displacement Encoding System

*It began with a single idea:
to create a measuring tool
to monitor a third-party contract.*

The Parametricoder system started with a need expressed by the Maryland Aviation Administration (MAA) to measure and record step/pallet tread deflection data under load on escalators and moving walks at the Baltimore/Washington International (BWI) Airport. VTX found that there was no commercially available tool that would meet the testing requirements. Fortunately, we have staff with the design experience and inventive spirit to develop the required instrumentation and step/pallet loading and were able to address MAA's needs.

True Diagnostic Measurements

Basic recording of the step/pallet deflections under load could have been handled through a variety of means. We applied additional criteria to the development to make sure that the information and services we provided not only met the basic needs but provided additional capabilities that would permit the measurements to be true diagnostic measurements that could monitor changes within the escalators and moving walks over time. We focused on digital measurement and recording from the beginning to allow the data to be reviewed in a variety of ways.

Time and Displacement Encoding System

Invention and creativity occasionally requires a small stroke of fortune. This was the case in the Parametricoder system. The core electronics selected to measure and record the basic data required for BWI opened new opportunities for measurements and

data collection well beyond the basic step/pallet tread deflections. Our team quickly identified other capabilities that could be applied to the vertical transportation field and beyond.

Using these capabilities and developing applications around them resulted in the Parametricoder time and displacement encoding system. The Parametricoder has been successfully used at BWI and other locations to measure the following performance characteristics on escalators and moving walks:

- Measurement of step/pallet tread deflections under an applied load while the escalator or moving walk is operating at full speed.
- Speed measurements of handrails and step/pallet bands for escalators and moving walks to assess performance characteristics and changes within the system.
- Starting and stopping acceleration and deceleration performance for escalators and moving walks.



Instrumentation System

The Parametricoder system also provides an instrumentation system capable of recording a variety of other time and displacement based measurements that are applicable to the vertical transportation industry.



Kenneth G. Hamby, Q.E.I.
Vice President

August is National Inventor's Month, a month long event celebrating invention and creativity. Civilizations and industries have developed and flourished on the shoulders of those with the inventive spirit.

Plato has been attributed with the often quoted idiom "Necessity is the mother of invention" meaning that a need or problem encourages creative efforts to meet the need or solve the problem. I have found that a need, real or perceived, generally is the reason anything is ever invented or improved.

We at VTX often find ourselves faced with the need for inventive and creative thinking to meet the needs of our Clients. One of our recent inventive accomplishments is the Parametricoder™ time and displacement encoding system that enables VTX to secure a range of motion performance data from operating equipment.

We sincerely hope that you find this information helpful in your day-to-day activities. Feel free to e-mail me directly, khamby@vtexcellence.com.

While the Parametricoder system may not be a major technological invention, we fully believe that it opens new avenues for performance testing and recording in the field. The data and procedures developed behind the system will provide our staff with information that will benefit our Clients both in short-term assessments and long-term evaluations of equipment performance and the effectiveness of preventive maintenance programs.

However, VTX's innovative ideas don't stop there. Currently, our firm has a patent-pending design process for remote monitoring and maintenance management - Oculus Network™.

Oculus Network™ – Enhancing Maintenance Effort

Elevators and escalators are key elements; and liability, access, and system availability are key issues for any facility manager. However, some agencies have difficulty determining if their equipment is even running. Some agencies rely solely on complaints from the public to identify a problem within the system.

The Process

Our firm designed the Oculus Network, a design process for generic, open-source code remote monitoring and maintenance management for elevators, escalators, pumps, fans, and other equipment (new and existing).

The Solution

The Oculus Network connects various makes and models of mechanical equipment to a unique alarm and work order management system. This two-way remote monitoring system ties into a sophisticated and smart work order management database permitting access in the field of technical support and documentation.

Corrective work orders are automatically generated for the owner, and a mechanic can be simultaneously dispatched. The information provided to the facility manager and the mechanic is reliable, accurate, specific, and easy to use.

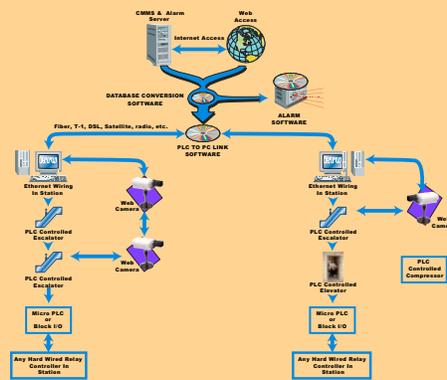
Combining the use of remote monitoring systems with database software, provides managers with information regarding the current condition and operating status of mechanical equipment and results in accurate record keeping of maintenance efforts.

Expandable Design

The Oculus Network can be configured to connect various building equipment, such as elevators, escalators, blowers, compressors, HVAC equipment, pump stations, or any other electronic-controlled device. Fiber, copper, or wireless connections are possible and can be customized for any location. The Oculus Network is designed to be both scalable and expandable.

Benefits

Managing equipment in geographically diverse facilities is difficult and often frustrating. It is now possible to connect many different pieces of equipment and get real time information in alarms and in the computerized maintenance management system. You can add more and more equipment to the Oculus Network without purchasing new software and hardware since there are no additional license fees to implement the Oculus Network.



We at VTX are more than just consultants; we have an inventive spirit that helps us stand out from our competition. We encourage each of you to pause during the month and reflect on those from our industry whose inventive nature have formed our past and are shaping our future. Celebrate the efforts of the likes of Otis, Seeberger, Reno, and the countless others whose innovation brought us to our present. Thank those among you, as we thank our own staff, who's creative efforts are carrying us all into the future.



In the heat of the summer, most of us have experienced either a brown out or a black out. At home it can be inconvenient, but rarely life threatening. The same cannot be said for a hospital, airport, and transportation facility that require a reliable source of standby power in an emergency.

Emergency generators are the most common source of standby power, but proper testing of elevators on the generator system is not a common practice. The Code is very clear on these requirements, yet we find that the vast majority of owners and maintenance companies we talk to do not understand the requirements. This misunderstanding can lead to failures of either the elevator or the generator itself.

Requirement 8.11.2.2.7 of the ASME A17.1 Code regarding existing elevators on standby power requires an annual test of the elevator on standby power. If more than one elevator is capable of operating on standby power simultaneously, then they must be tested on standby power simultaneously. This test can be performed with no load on the elevator.

While this test is simple, it is often neglected or postponed to the point that it is often forgotten. It is our strong recommendation that all parties responsible ensure that this annual test is completed in coordination with the maintenance contractor, owner, and the emergency generator contractor without fail.

If the annual test is forgotten or postponed, consider the five-year test requirements. This test is identical to the annual test with one very significant difference. 8.11.2.3.5 Emergency and Standby Power Operation states operation of elevators equipped with emergency or standby power shall be inspected and tested for conformance with the applicable requirements (Item 1.17.2). Passenger elevators and freight elevators permitted to carry passengers (see 2.16.4) shall be tested with test weights equaling 125 percent of the full load of the elevator.

If an elevator has been modernized with a solid state drive, the need for this test is even more important. This is due to the new electrical characteristics installed that may adversely impact the emergency generator system. For more information on elevators and emergency power, visit www.vtexcellence.com and navigate to our technical library.



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