

2005 Frost & Sullivan Customer Service Leadership Award

Award Description; Research Methodology

NORTH AMERICAN BATTERY CHARGER MARKETS Publisher: Frost & Sullivan, Telephone: US (415) 961-1000; London 071 730 3438

2005 Frost & Sullivan Customer Service Leadership Award

Award Description

The Frost & Sullivan Award for Customer Service Leadership is bestowed upon the company that has demonstrated excellence in Customer Service Leadership within their industry. The recipient company has shown tremendous responsiveness to customer needs and has continually focused on long and short-term customer profitability goals. In addition, the winning company demonstrated flexibility in tailoring their product offerings to suit customer businesses.

Research Methodology

To choose the recipient of this award, the analyst team tracks all industry participants and monitors their customer service methods on an ongoing basis. The award recipient is selected based upon extensive research collected from key market participants, secondary and technology sources, and customer interviews. Collected data is then cross-tabulated.

Measurement Criteria

In addition to the methodology described above, there are specific criteria used in determining the final ranking of industry competitors. The recipient of this award has excelled based on the following criteria:

- Value-added promotional support
- Providing value-added technology and services
- Responsiveness to customer needs
- Time to market
- Monitoring and addressing customer feedback

Award Recipient - PosiCharge (AeroVironment, Inc.)

PosiCharge is dedicated to the industrial battery charger industry, consistently offering innovative charging technologies that serve the unmet needs of industrial end-users in a myriad of application areas including light and heavy duty, and other electric vehicles. By offering truly advance fast charging systems, PosiCharge is striving to make its clients day-to-day operations more productive and less costly in terms of battery usage. For these reasons, Frost & Sullivan is proud to present PosiCharge with the 2005 Customer Service Leadership Award in the North American Battery Charger market.

PosiCharge is a registered trademark of AeroVironment, Inc. who has served the power electronics and battery management industries for over 30 years. Founded in 1971 as an R&D firm, AeroVironment quickly became known for many breakthrough technological achievements. PosiCharge has evolved from this strong foundation to supply the industrial marketplace with an innovative fast battery charging system that allows its clients to do away with costly battery rooms.

Battery Charger Comparison

Conventional charging requires investments in both charging apparatus and battery handling equipment. Also, a high level of labor hours are spent by operators and/or maintenance workers in changing and charging batteries, in addition to watering flooded lead acid batteries. Although

the fast charger initial investment is higher than that of conventional 'trickle chargers', the resulting set-up investment is minimal. There is no battery room or battery change-out equipment required. Simply stated, one battery per vehicle is the premise. Labor savings results from utilizing fast charging technology because batteries are not swapped out until their life span has ended. Therefore, many of the dangers of frequently handling heavy, potentially corrosive batteries are avoided.

With fast charging systems, a single battery remains onboard each truck, even through the same forklift may be used over multiple shifts. The forklift's battery is then charged in the vehicle when there are opportunities to do so: at operator mid-shift breaks and lunch periods, at shift changes, and at other times when the vehicle is not in use. Charge current is at least or more than four times higher in fast charging.

With conventional trickle chargers, a depleted battery receives a restorative overnight charge for 6 to 8 hours. Then the battery must rest and cool down for another 3 to 8 hours before it is ready to go back into service. In effect, this battery can work only one shift a day. In contrast, fast charging can keep a multi-shift operation with an electric vehicle fleet of four or far more trucks up and running very productively—all without battery change-outs. Fast charging is a bottom-up approach to safely maintaining all the batteries in a fleet in the most efficient state-of-charge. This is typically between 40 percent and 80 percent state-of-charge (SOC).

PosiCharge Technology

PosiCharge was one of the first fast charging systems available to the industrial market. The company offers many variations to support any client need, whether it be single vehicle, dual vehicle, multi vehicle, ground support equipment, or Class III fleets. The following outlines information regarding the PosiCharge fast charge systems

- Charge rate: 0.6 C
- Charging scheme: 20-80% SOC
- Charging time: hour
- Charging routine:
 - Fast charge during week to 80% SOC
 - Slow charge once a week to 100% SOC
- Charging Algorithm: DC, no pulsing
- Requires on-battery monitor (BMID)

As an emerging technology into a well-established mature industry such as the industrial space, many entry barriers exist in terms of product placement, customer buy-in, price, and others. PosiCharge has done an exceptional job in terms of demonstrating the value proposition of fast charger systems, identifying and focusing on growing market areas, and satisfying customer's unmet needs. Over a short span of time, PosiCharge has been able to provide many key industry players with fast charging technology to ensure high productivity and low long-term investment in terms of battery service/replacement, and battery charging costs. The following outlines a selection of clients PosiCharge caters to:

- SYSCO Corporation
- Ford Motor Company
- Kraft Foods Inc.
- American Airlines
- Toyota Motor Manufacturing
- Square D

- Del Monte
- Ashley Furniture Industries
- Brylane L.P.
- Dallas Fort Worth International Airport
- Many others

PosiCharge closely works with each client from the initial contact through system integration. The following outlines key areas of support –

- Establishing value proposition in terms of analyzing the client's need (number of work shift, vehicles, etc)
- Full site audit
- Assess and identify key area in facility for charging system to provide the most optimal results
- Retrofit existing facilities in addition to working with client's new builds
- Provide BMID technology for every battery used
- Because the PosiCharge system is fully automated, training is minimal for each driver. Basic training is supplied in terms of how to connect the vehicle to the fast charge system
- Full suite of pre - and post-sales support for all systems

In addition to product support, PosiCharge is involved with key battery testing areas such as battery wear, longer battery life, and extended run times with its systems. All major lead acid battery manufacturers that cater to the industrial market offer a standard 3 year warranty on batteries used with fast charging systems. Recently, one of PosiCharge's longtime clients Sysco, announced the results of an in-depth independent battery testing. Sysco has conducted three fast charge audits over the last 36 months, each managed by an independent third party. The tests were focused on batteries used in conjunction with PosiCharge fast charge systems. The tests clearly demonstrated that the batteries have retained over 92 percent of their rated capacity. The batteries tested kept this capacity even when subjected to multiple shifts, six days a week of usage, and for almost three years.

Conclusion

By working closely with its customers, PosiCharge has maintained its focus to ultimately remove the battery room and provide a safer, more efficient way to charge industrial lead acid batteries over multiple shifts. By eliminating the battery room, PosiCharge can increase productivity and reduce time lost from traditional charging stations wherein batteries must be removed to be charged. PosiCharge strives to provide the most in-depth technological support for its systems, from the initial site audit and needs assessment, through product implementation and post support features. For these reasons, PosiCharge, an AeroVironment, Inc. business, is a worthy recipient of the 2005 Frost & Sullivan Customer Service Leadership award.

Copyright Frost & Sullivan 2005

Frost & Sullivan Market Engineering
 © 2005 Frost & Sullivan. All rights reserved.
 Dialog® File Number 767 Accession Number 1188808