



# The RV's nervous system

One of the less visible but most important elements of recreational vehicles is the harness wiring, the production of which is especially complex to manage. Meeting everyone's needs in this field is the Italian company Nordelettronica.

*Words Paolo Galvani*

**W**hen we think of a motorhome, our focus goes immediately to the structure of the cell, the internal layout, the range of accessories and the mechanical frame. A recreational vehicle though, is made of many hidden elements that are crucial in determining its quality and performance. Even though they can't be seen, they are essential to everyday life and their quality is important to meet the end user's requirements and to ensure the product's durability. In Italy, there's a company that processes elec-

tric and electronic components to offer manufacturers and installers top-range solutions. Over the past 40 years or so, Nordelettronica at Albina di Gaiarine, located in the province of Treviso, has been manufacturing battery chargers, control panels, harness wiring and other accessories. The wiring is among the less obvious elements inside a motorhome but also one of the most important, much like the "boosters" (DC/DC converters) are. The introduction of new mechanical bases, featuring smart alternators, necessarily calls for



*The new automated warehouse*





## More space in Romania

Nordelettronica has been operating in Romania since 2004 and recently acquired full ownership of the subsidiary SC Nordelectronica East.

Thanks to this acquisition, the Italian company increased its production surface by 700 square meters.

The growth of the market and the outstanding results achieved have led the company to further expand its facilities in Arad, adding another 700 square meters to the pre-existing floor plan of the production hall (2,000 square meters) that are dedicated exclusively to the manufacture of electronic boards.



## Company Profile

Nordelettronica, established in Italy in 1978, has always been focused on electronic equipment for the RV sector: from battery chargers for camper vans and low-voltage distribution module to electrical wiring and control panels. Outside of the caravanning sector, Nordelettronica makes wound components for industrial electronics, like switching and power transformers. Production has also focused on the industrial cleaning sector (floor cleaning machines). Study, design and manufacturing activities are performed in-house. This means considerable flexibility and solutions targeted to the customers' real needs. Having been re-organised in 2011 with the introduction of new partners, Nordelettronica has gained new momentum and the turnover has gone from 5.5 to 11 million Euro over the past seven years. Direct exports represent 30% of sales, with 70% of products sold to Italian companies, which in turn export at least half of their production. The production site in Arad, Romania, managed by the subsidiary SC Nordelectronica East srl, was added to the Treviso (Italy) site.

the use of components that are capable of drawing energy from an alternator designed to cut down fuel consumption and convert it into energy (that can also be used to recharge the service batteries, and to power the refrigerator while on the road). The introduction of DC/DC converters is therefore a growing market segment and Nordelettronica has the right answer for its customers. In fact, it recently launched the NE 325 model, which comes available with two different power outputs: 25 and 40 Ampère. Besides being installed as part of the vehicle's original equipment, this device can also be added on as an optional.

### Harness wiring

The Italian company continues to invest also in harness wiring. A peculiar feature of the motorhome's nervous system is that for the most part, it is assembled as a "spider", i.e. a single prewired system geared with all the shunts needed for the electrical connection of the various devices. This is a complex and intricate solution that weighs about 20 kilograms (45 pounds) on average and that needs to be meticulously designed from the very first stages of the vehicle concept. Normally, this task is handled directly by the motorhome's manufacturer with our assistance.

Nordelettronica then takes care of all the operating specifications that go into the production of the wiring itself.

Production takes place at the company's business unit located in Arad, Romania. The harness wiring industry is highly complex because compared to other products, the quantities involved for each variant are very small. Whereas it isn't unusual to receive hundreds or thousands of orders for a battery charger or a control panel, when it comes to the wiring, each product needs to be adapted to each individual version of the vehicle. The presence in a manufacturer's catalogue of the same motorhome with different layouts and internal set-ups produces the need for just as many wiring system variants. And since, for instance, a lot less motorhomes with a French bed are sold than ones with twin beds, it becomes clear that the quantities involved can range from a few units to several dozens. Practically speaking, we're still talking about customized productions made to order. One of Nordelettronica's great strengths is that it can meet the customer's demands in a very short time span, introducing changes if necessary, even during the manufacturing process.

And while work is under way to complete

the expansion of the manufacturing plant in Arad (see the box above), in Treviso the company has simultaneously adopted a modern automated warehouse. The new system accelerates and simplifies the management of components in a department that can count a range of about 6,000 different items. The R&D Division, instead, is continuously working on the development of new products. At the upcoming Caravan Salon in Düsseldorf, Nordelettronica is planning to premiere a new battery charger with an impressive 40 Ampère of power output that has been designed and optimized for use with lithium batteries.



The NE325 DC / DC converter