



1. Introduction

Clubs in the French associations UAICF and FFMF have many years of experience in using the Module Junior^{®1)} as part of national youth development work, which is now also used in other European countries.

This modular system is a simple entry-level system with minimal requirements in terms of design and choice of materials. It has been developed primarily for children, young people and model railroad beginners so that they can set up and operate joint layouts with little effort.

With this standard, MOROP would like to invite the national associations to use this proven concept to make model railroading popular with young people.

The aims of using the Modules Junior by young model railroaders are

- Learning the basics of all necessary model railway trades by carry out of a Module Junior using the specifications of this standard;
- Participation in various national and international events (exhibitions, workshops, etc.), where the modules of many participants are put together to form a shared model railway layout in order to learn about analog or digital operation in a practical and playful way, and
- the meeting and exchange of young people from all over Europe with a common interest in the hobby of model trains and railroads.

The design is not tied to specific countries, eras or models. This is intended to enable and promote cooperation between model railroaders from different countries.

The modular system allows the parts to be transported as normal luggage on public transport and therefore also enables children and young people in particular to participate in modular arrangements at meetings and exhibitions.

Larger stations and the like are not covered by this standard. However, it must be possible to connect them appropriately to parts Module Junior parts and they should be provided by model railroad clubs or experienced model railroaders.

2. The Module Junior

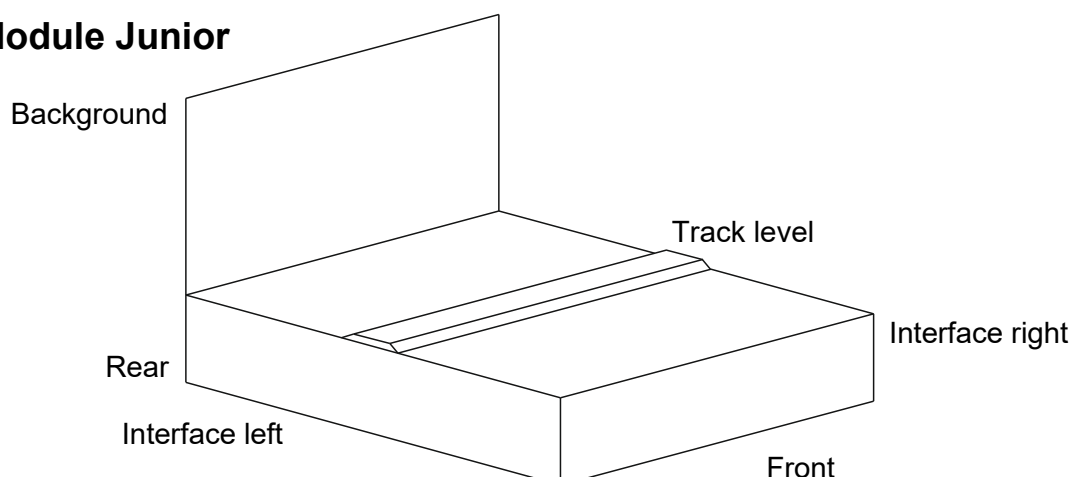


Fig. 1: Structure of a module

¹⁾ The Module Junior has been registered as a trademark by the Union artistique et intellectuelle des cheminots français, UAICF, with the Institut National de la Propriété Industrielle, INPI, under number 3617987.

The basic module consists of a frame and a rear wall (background) as well as generally a track board and lateral cover surfaces.

- Nominal size: H0, scale 1:87
- Basis: single-track line, no electrification
- Track system: profile 25, Code 100, profile height 2.5 mm
- Width: 400 mm at the interface to neighboring modules
- Module length: variable (see section 3)
- System: Two-rail-system (**analog** or **digital**),
also with center conductor under certain conditions (see section 2.3)

2.1 Interface

The interface has a width of 400 mm (without rear wall).
The track (single-track) is arranged in the middle of the interface.

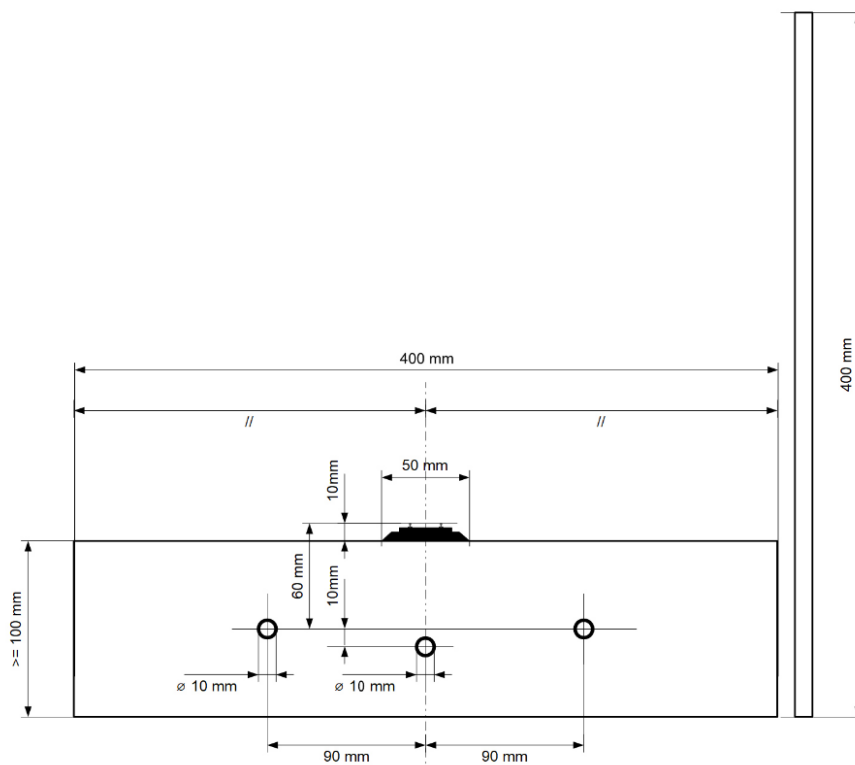


Fig. 1: Interface

The track layout beyond the interface(s) is freely selectable. It is possible to create a straight module (the simpler option for beginners), a curved module, a station with several tracks, a branch (which then has three interfaces to neighbouring modules).

- The terrain should end at the level of the interface if possible.
- Two modules are connected using M8 bolts, washers and (wing) nuts.
- The track is visually aligned at the interfaces and connected at the joints. No rail connectors or compensating pieces are used.

The additional hole in the middle under the track axis is optional for a possible connection with FREMO modules.

2.2 Electrical equipment of the module

- Between the modules only the track supply voltage is connected.
- The connection between the modules is established via 4 mm laboratory plugs (“banana plugs”).
- The socket is attached to the module, the plug to the connecting cable (plug-plug cable) or to the power supply cable (trunk cable with parallel outlets for individual modules).

To connect the track, each module is equipped with a box or holder for the banana sockets.

This is fixed in the module housing.

Operation can be done with analog or digital systems.

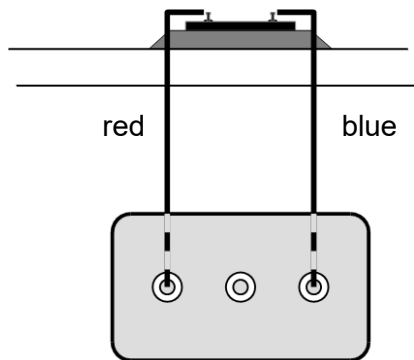


Fig. 3: Two-rail system (analog or digital)

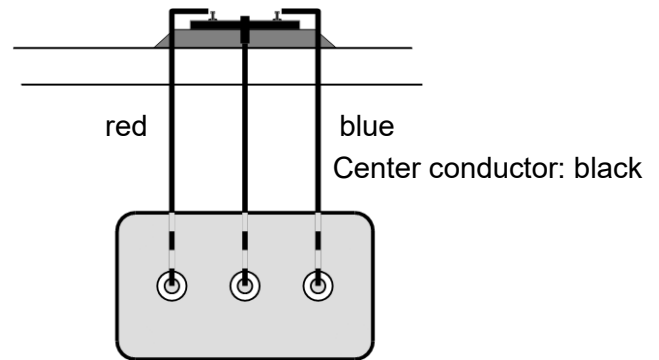


Fig. 4: System with central conductor (analog or digital)

2.2 Track construction

NEM 010, 110 and 111 must be taken into account when implementing the module.

The rail profile used must have a height of 2.5 mm (profile 25, code 100).

3. Recommendations

To use the Modules Junior in a model railway layout, it is only necessary to implement the specifications from chapter 2.

3.1 Frame construction

The frame and back panel should be made of 10 mm thick plywood (preferably multiplex).

The interface enables the connection between modules.

Width (total): 400 mm (mandatory)

Height (total): at least 100 mm

Note: For a landscape design with deep cuts (below rail height), the height of the interface can be increased.

The sides can be used to create a landscape profile.

Length: any (variable value depending on the theme of shape)

Height: at least 100 mm

A module length of 45 cm is recommended for easy transportation, especially on public transport.

The base area is used to build up the track bed (track and ballast) and the landscape.

Length: any (same length as the side surfaces)

Width: 380 mm or module interface (400 mm) minus the material thicknesses on both sides

The rear wall serves as the base plate of the module during transportation. This means that the space inside can also be used as a transport space for small items or accessories. Multiplex with a thickness of 10 mm is recommended for this purpose.

To transport the module, a **protective box** with suitable dimensions is placed over the module and fixed to each interface using the 10 mm holes. The recommended material for this is multiplex with a thickness of 5 mm. When the module is assembled, the protective box can be installed under the module as a storage surface.

3.2 Events

The operation of the system is based on the principle of a single-track line between the individual operating points.

The modules are mechanically **connected** at the interfaces by two M8 screws. The supply voltage is fed in via connecting cables between the modules or via a supply line with outlets at each module.

During an **international event**, the organizing or inviting country must make the following specifications:

- Height of the top of the rail above the floor (to determine the length of the legs, 1010 mm is recommended)
- Power supply (analog or digital, specifying the protocol to be used)

For the selection of modules and the compilation of layouts, it is recommended to create a database with available modules and their technical characteristics (dimensions, track layout, ...).

Note: These recommendations also apply to national events.

3.3 International meetings of young model railroaders

There are numerous funding opportunities within Europe to support meet-ups of young people. These can also be used to organize or to participate in model railway exhibitions.

For example, the **Franco-German Youth Office supports** group meetings. Here it is also possible to involve a third country (in addition to Germany and France). The age limit for the participation of young people is 30 years.

4. Information

Based on years of experience in the field, there are numerous suggestions and tips for practical implementation of Modul Junior.

Details on this as well as special and supplementary information may be included in country-specific supplements.