COMPONENTS

# Master controller for Rolling Stock Type **MMC**


Sécheron

## Data for product selection

### LOW VOLTAGE CONTROL CIRCUITS AND AUXILIARY

| | Symbol | Unit | |
|---|---|---|---|
| **Drive/brake handle position switches** | | | |
| Supply voltage | $U_n$ | [VDC] | 24 to 110 |
| Voltage range | | | [0.7 – 1.25] Un |
| **Drive/brake handle position switches** | | | |
| Type of contact | | | Potential free |
| Maximum number | | | 8a + 8b |
| **Drive/brake handle position angle analog digital converter** | | | |
| Angle range | | | 264° |
| **Drive/brake handle Dead man switches** | | | |
| Type of contact | | | Potential free |
| Maximum number | | | 2a + 2b |
| **Direction handle position switches** | | | |
| Type of contact | | | Potential free |
| Maximum number | | | 4 |
| **Key lock master switch** | | | |
| Type of contact | | | Potential free |
| Maximum number | | | 1a + 1b |

### OPERATING CONDITIONS

| | | | |
|---|---|---|---|
| Installation | | | Indoors |
| Altitude | | [m] | <1400 |
| Working ambient temperature | $T_{amb}$ | [°C] | -40°C to +70°C |

## General information


The master controller' series, manufactured by Sécheron S.A. for more than 15 years, is now being enlarged with the new MMC model, designed to offer the rail car builders and operators, a product fully configurable by selecting the needed functions and features in a catalog of pre-designed modules.

Thanks to the experience gathered in this field by Sécheron over the years and to the intensive design work, three key targets for our customers could be combined with this new design:

- Capability to customize the master controller to comply with the constraints of the vehicle' integration
- Possibility to address the main requirements raised by the operators for the vehicle driver's comfort and safety
- High level of optimisation of the industrial processes for the constituting modules and assembled master controller

### Applications

The master controller is designed to be installed in the driver's cab of all types of rail vehicles (Tramway, Light Rail Vehicle, Train and Locomotive), either on the dash board or in a side console. It is used to transmit the control commands for the vehicle's operations such as driving speed, braking force and travelling direction, to the on-board traction electronics or to the electromechanical traction control.

### Main features

- Highest modularity
- Highest safety and reliability with possibility to have redundant output signals
- Ergonomic and robust design to ensure a high level of comfort to the driver and withstand heavy duty conditions resulting a longer mechanical life time
- Designed according to IEC61373, EN50155, EN50121-3

### Modularity concept

The following fontions and featurescan be selected and combined to build your master controller.

### Drive & brake controller


Combined drive and brake T-shape handle to set the traction speed and the braking force.

The drive/brake handle is equipped with a dead man function.

**Configurable features**

- Handle shape
- Handle motion with notching positions (number of positions to be defined) or step-less – Combination possible
- Handle position transmited through up to 8 double potential free contacts, actived by a configurable drum analog or digital angle converter – combination possible for redundancy
- CAN bus interface in option for digital angle converter output
- Right or left position of the handle
- Dead man function activated either pushing the handle downwards or rotating it
- One or two dead man output signal(s)

### Direction controller


Mushroom shape handle with positions "FORWARD, NEUTRAL, REVERSE", to control the running direction of the vehicle. The handle position is mechanically interlocked with the drive/brake handle.

**Configurable features**

- Right or left position of the handle
- Handle position transmited through up to 4x potential free contacts
- Can be mounted as a seperate device

### Key lock master switch


This lockable switch is the main switch to operate the master controller

**Configurable features**

- Switch can be mounted like a seperate device
- Key position output signal either: potential free or change-over type

## Low voltage interface

All the output signals are wired on a single Harting connector type modular DDD. When the CAN bus interface is selected an additional SUB-D connector will be installed.

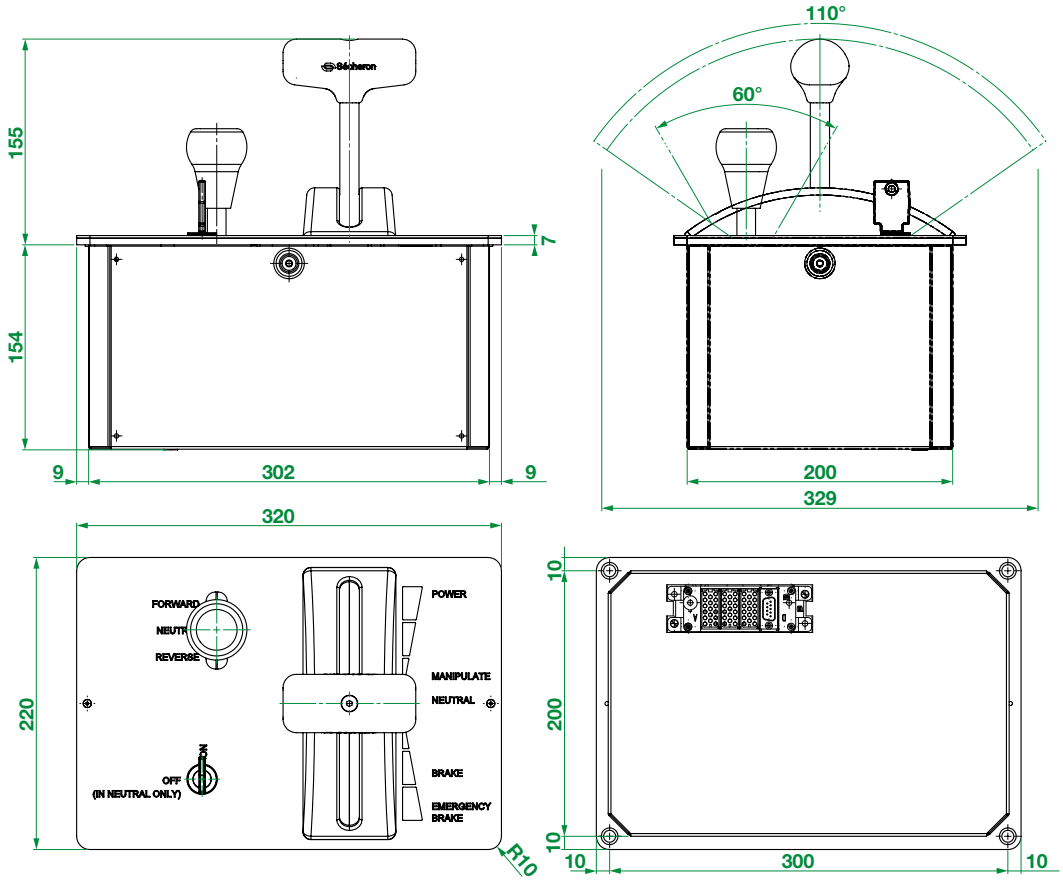
## Front plate

The master controller can be delivered without or with a front plate that indicates the selected functions, as well as the different main positions of the handles, and that can also ensure an adequate protection from dash board surface against intrusion of solid particles inside the handle's module.

## Protecting cover

To ensure an adequate protection index of the bottom part of the master controller if installed in polluted environment, a light cover with opening access(es) to the low voltage connectors can be delivered.

## Information for product integration





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