

Executive Seats-Architecture

Elevate your journey with the next generation of passenger comfort. Our advanced Executive Seat Control System is specifically designed for the executive model seats inside the ETR 1000 vehicle. We combine smart technology, elegant design, and top-tier safety to deliver a flawless travel experience.

ETR1000

SmartControl



Innovative components

Smart Control Unit

This powerful module acts as the brain of the seat, managing power and logic seamlessly.

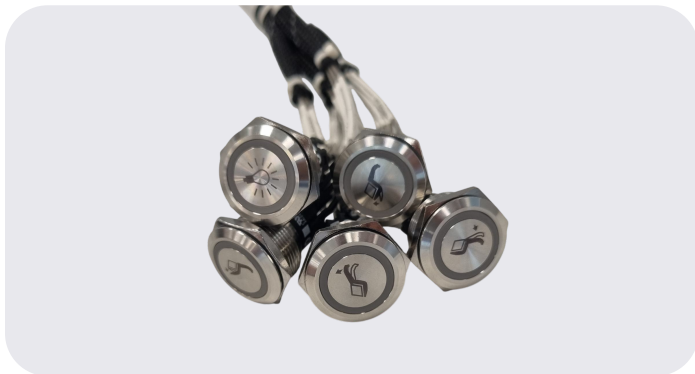
Elegant Push Buttons

The system features five mechanical command buttons housed in sleek stainless steel. They include brilliant white LED backlighting and laser-printed symbols for effortless operation.

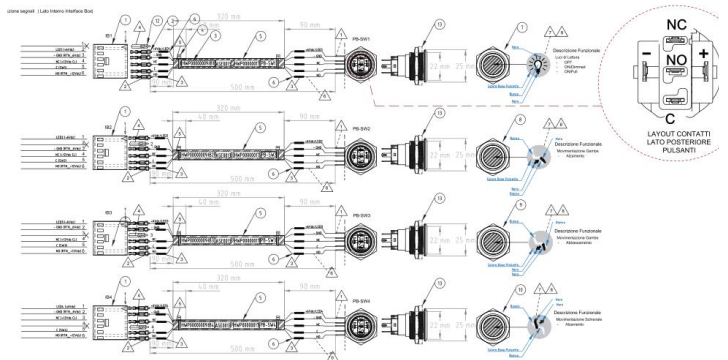
Custom Reading Lights

Dual LED cards provide right and left overhead lighting. Passengers can easily switch between full and dimmed beam intensities for perfect illumination.

Detail button



Scheme of all the buttons of the system



Unmatched strengths & benefits

Smart Maintenance Mode

Vehicle operators can trigger a dedicated remote-control sequence. This automatically turns on the lights, moves the backrest fully forward, closes the leg rest, and then turns the lights off for fast, efficient maintenance.

Anti-Crush Safety System

Passenger safety is the priority. Custom sensors measure motor current to limit maximum torque. If power consumption exceeds set safety thresholds, the system immediately cuts the motor drive to prevent accidental crushing.

Thermal Protection Guard

Dedicated sensors constantly monitor the temperature of both the backrest actuator and the legrest motor. The system automatically halts operation if temperatures exceed 60°C and restores functionality safely once they drop below 55°C.

Fluid Seat Transitions

A built-in Pulse Width Modulation soft-start function eliminates sudden jerks and reduces inrush currents. This delivers a seamless and highly comfortable movement experience for the passenger.

Independent Motor Control

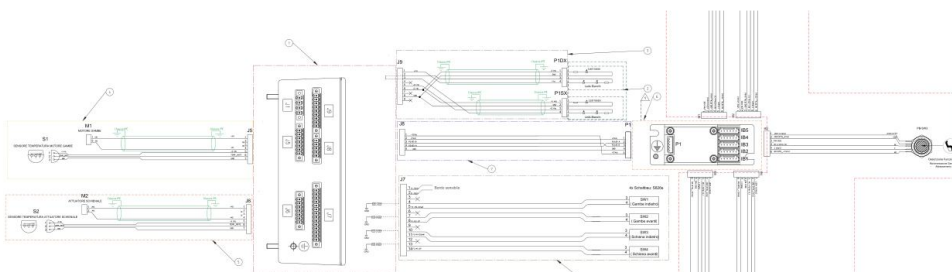
The system guarantees that only one motor operates at a given time. This logic prevents power overloads and ensures highly controlled, deliberate adjustments.

Advanced Local Diagnostics

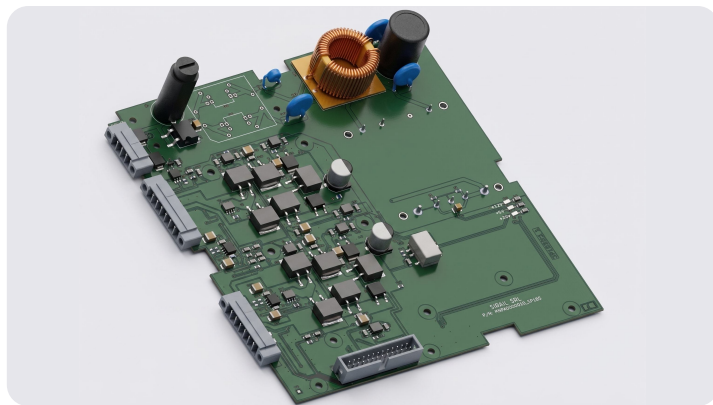
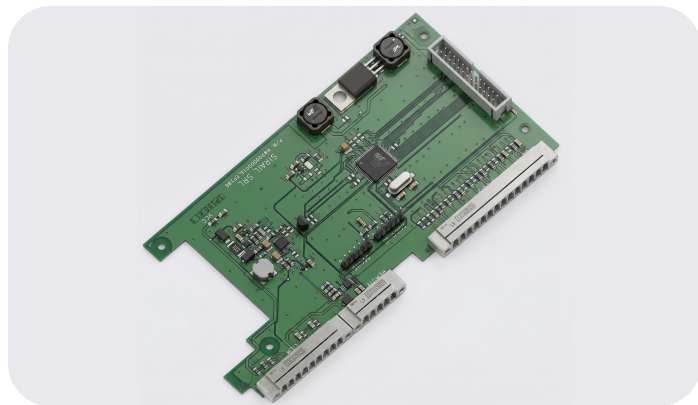
Stay informed in real-time. Visual alarms are integrated directly into the push-button LEDs. Blinking white lights instantly signal engaged limit switches, high temperatures, or current overloads.

Intelligent Movement Monitoring

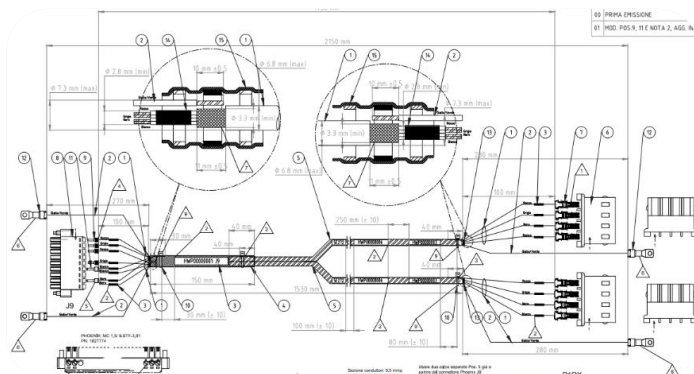
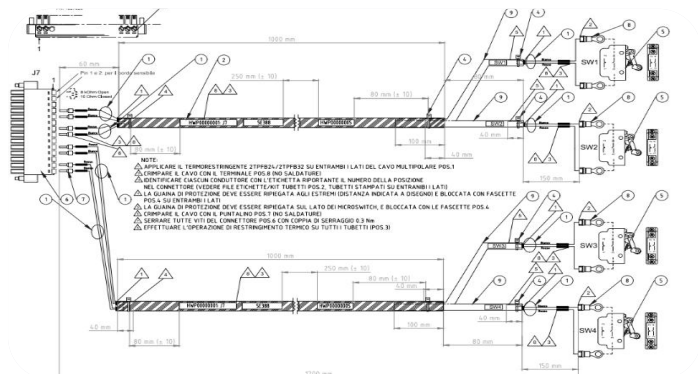
The microcontroller continuously tracks the seat's dynamic status. It monitors end-stop microswitches to ensure precise positioning and stops the motor immediately when a limit is reached.



Electronical Boards



Details of wire-wire connections



Water Level System Bistrò

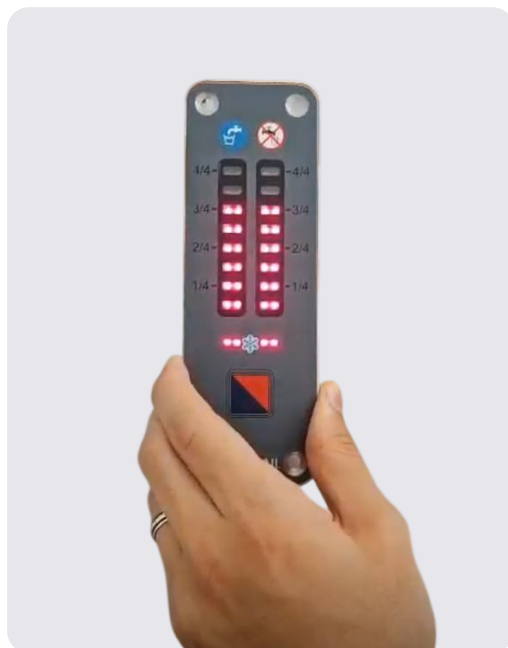
Total Control, at a Glance. Our Level Monitoring System is the ultimate solution for smart tank monitoring in the onboard train bistro. Designed specifically for the ETR1000 project, the system consists of 2 main elements: a central control unit (CPU) & practical display level indicators.

This technology allows real-time monitoring of the status of the Fresh Water Tank (FWT) and the Waste Water Tank (WWT). The filling level is communicated to the operator visually and immediately through a quarter-scale, accurately covering the steps of 0%, 25%, 50%, 75% to 100%.

Bistrot ETR 1000

Water Management

TCMS



Core Strengths

Safety and Self-Diagnostics

No surprises. The system is equipped with smart self-diagnostic routines, ready to send immediate alarm signals in case of malfunctions or when the tank needs to be emptied.

Compact and Versatile Design

Aesthetics meet functionality. The simple and compact design of the level indicators allows for easy and seamless integration into the interior furnishings of the train car.

Extreme Durability

Built to last. The material of the displays combined with an IP65 water protection rating, allow them to be used with total safety even on the outside of the train.

Maximum Operational Precision

The system guarantees rigorous control over the filling and emptying cycles. The result? The risk of tank overfilling is completely eliminated.

Uncompromising Reliability

The combined action of pressure sensors and level switches ensures excellent reading reliability. The system performs perfectly even in the most critical and dirt-heavy environments, such as the waste water tank.

Ready for Expansion

Built with future-proof scalability in mind. Thanks to smart I/O provisions (spares), the system is already equipped to seamlessly manage additional sensor signals and extra TCMS interface connections whenever your needs evolve.

Main components

CPU Bistrot

Control Unit module to managing interface signal to TCMS and sensors and probes used for FWT and WWT.

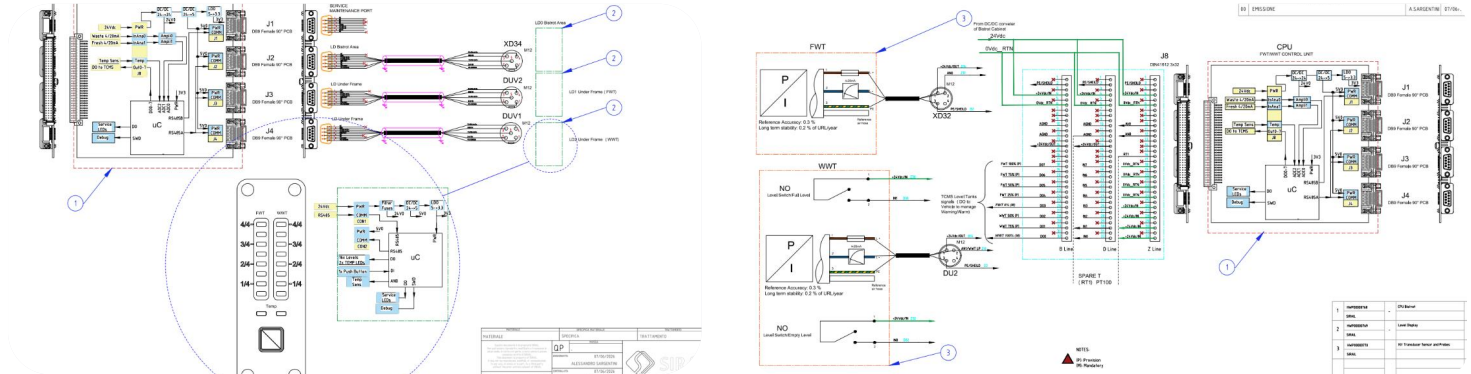
TPS & LPs

TPS and LPs, installed directly on the tanks, with a function for detecting the levels of the liquid stored inside.

LDs

LDs located (two below the tank) and one in the bistrot area, so that the operator can directly visualize (by pressing a button for each LD) the levels ranging from 0% to 100% for the two tanks.

Overall scheme of the Electrical system



Data logger Yellow Train

Specifically designed for work vehicles and shunting locomotives

Compact dimension : 370 x 282.5 x 138mm

Compliant



Main informations

Railway Standard

EN 14033, EN 45545-2, EN 50121-3-2, EN 55022, EN 61000-4-xx, EN 61373, Black Box EN 62625 Category A

Retrofit ready

Quick fastening and bolted connection. Designed for easy installation.

Connected

PC tool and mobile app. CAN & RS-485 communications

Scalable

20 + 20
Base + expansion channels
Up to +34 Channels

