

RCE - Chronological Events Recorder



The Chronological Events Recorder (RCE) is the Black Box (Orange Box) of the Signalling System (IS). The conditions of the monitored input connected to free relays contacts of the Signalling System are recorded on extractable Memory Card. 4 RCE models are available. The difference among them is based on the maximum number of inputs: 48, 240, 512 "wiring from the top", 512 "wiring from below".

- RCE 48 inputs (**cat/prog 860/200**, approved according to the **RFI TCSSTB SF IS 05 733 C** Italian Railway Specification.
- RCE 240 inputs (**cat/prog 860/201**, approved according to the **DI TCSSTB SF IS 05 739 A** Italian Railway Specification.
- RCE 512 inputs, "wiring from the top" (**cat/prog 860/202**, approved according to the **DI TCSSTB SF IS 05 739 A** Italian Railway Specification.
- RCE 512 input, with "wiring from below" (**cat/prog 860/203**, approved according to the **DI TCSSTB SF IS 05 739 A** Italian Railway Specification.

Management and time synchronization of many RCE could be done from a remote Control Center (**cat/prog 860/322**). They are connected via analogue relay modem inside of each RCE (operating in the phonic band at 9600 bps). RCE connection is performed through twin pair telephone cable (with 9/10 type it is possible to reach a distance of 15km between one RCE and the next one) and the Control Center Modem (**cat/prog 860/323**). RCE is equipped with a local service port, for local setting and device interrogation, and a serial port for an eventual connection to a Centralized Diagnostic System (SDC). If the RCE is used in the "stand alone" mode (without centralization), it is equipped with a GPS for local time synchronization.



CONTROL CENTER

Depending on the level of authorization access, each Control Center or relative Client allows: to view actual data/alarms, to look at the historical data of the system, to graphically display data captured by each RCE, to configure or interrogate the device conditions.



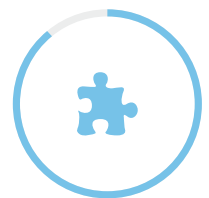
DIAGNOSTICS

For each RCE it is possible to set Diagnostics Algorithms called "Relay Cycles". They communicate a proper Alarm to the Control Center whenever it detects a particular combination of relay set by the user that corresponds to an anomaly of the Signalling System.



ALARMS

Visual and acoustic communication of RCE auto diagnostics or diagnostics alarms "Relay Cycles".



INTEROPERABILITY

Both the RCE and the Centralized Control Center use the **RFI: IS001A** Italian Railway Communication Protocol, with commands standardization IS005C, that enable them to operate with RCE and Control Center of other manufacturers.