

***Extraordinary maintenance on a command and control system of a CERETTI & TANFANI CT159 track crane at Terminal molo B – Porto Marghera VENICE.***



Purchaser: **T.M.B. S.R.L.**

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Time required: About 6 months.

**Mechanism data:**

Feeding: from 3 kV average network with cable reel.

Principal transformer: 3/0.4 kV 630 KVA resin.

Bucket manoeuvre and lifting: 2 15 kW asynchronous engines with inverter.

Wagon translation: 2 15 kW asynchronous engine with inverter.

Jib movement on sea side: 1 35 kW asynchronous engine with inverter.

Bridge translation: 6 12 kW engines with rotary control.

Maximum ropes' capacity: 30t.

**Description:**

The crane for dock needed a renewal in the control system in order to increasing the reliability. A recent SIEMENS S7 control device, with the possibility of communication on data bus and CPU with floating point calculation, has been then proposed instead of the relay logic. It has been chosen to employ some frequency converters (one of the few realisations in Italy) with regenerative systems for the movement of the manoeuvre in order to reduce the dissipation loss. In particular the bucket engines have been replaced with modern and reliable asynchronous engines. The wagon movement has been realized with extremely precise inverter with move precision and low working stress.

All the system is monitored on board by a PC with diagnostic process and report of the alarm signals, moreover an optical fiber communication system allows the command and the control even from earth. The hardware engineering has engineered the system "ex novo" maintaining only small parts of the existing one and applying the newest technology for safety and control functions.