**EFACEC Engenharia, S.A.**
**Power Systems Automation**

HMI 500    HMI 500E

Due to the continuous development, the characteristics may change without notice. Not valid as a contractual item.

implementation according to the    SUB STATION+    POWER PLANT+    concepts

## 1 – Introduction

HMI 500 and HMI 500E applications correspond to the most recent EFACEC's solution for the Human Machine Interface implementation of SCADA systems, assigned to manage locally, via Web, automation, supervision, control and protection complex distributed systems. Both applications fit in the SUBSTATION+ and POWERPLANT+ concepts, concerning the systems conception, based on the object oriented paradigm, on Web technologies usage for the Human Machine Interface implementation, as well as on specific industrial standards.

HMI 500 and HMI 500E implement important requirements defined in the SUBSTATION+ and POWERPLANT+ concepts, assuring with effectiveness their application in several industrial contexts, such as substations or power plants, for example.

## 2 – HMI 500 and HMI 500E Presentation

Both applications are of the Web server type and are identical, changing the designation according to the platform's hardware type where they are running.

It is designated as HMI 500 when installed in a conventional hardware running under the WINDOWS XP operating system

It is designated as HMI 500 when installed in a diskless & fanless hardware running under the WINDOWS XP Embedded operating system.

HMI 500 is normally installed in the same conventional central unit's hardware of the CLP 500 platform: UC 500. It is also the native solution for the Human Machine Interface of the SPS 500, system's server of system, in the perspective defined in the SUBSTATION+ and POWERPLANT+ concepts.
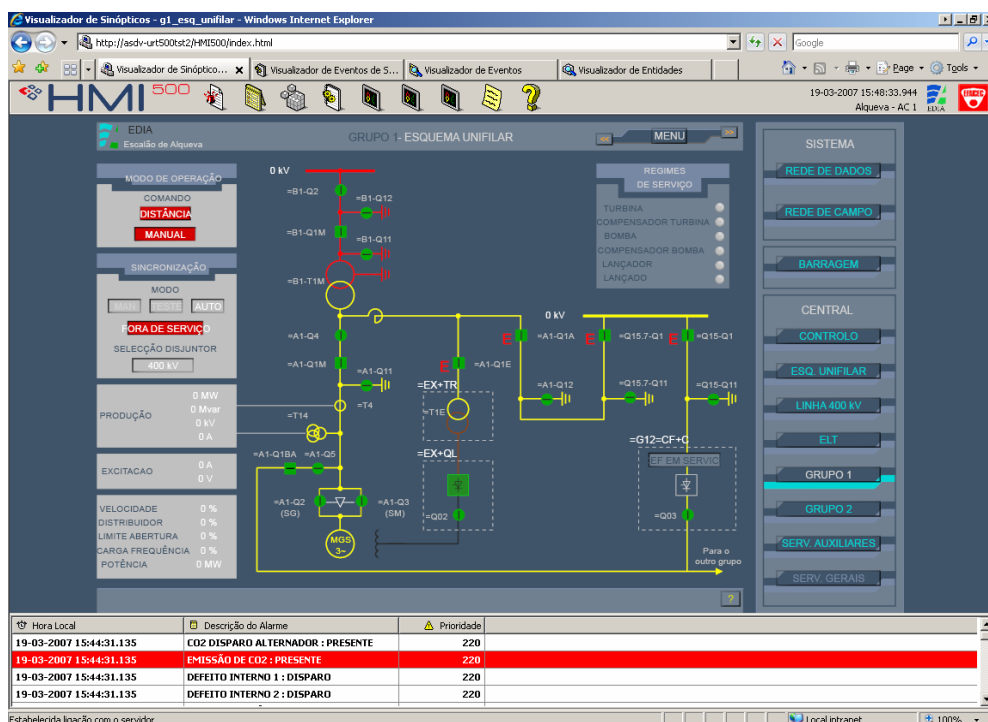
The HMI 500E is usually installed in the same central units' diskless hardware of the CLP 500 platform: UC 500E or DUAL 500E.

HMI 500 and HMI 500E correspond to a modern and flexible solution, using technology according to the state of the art, adequate to be acceded by commercial browsers, from any type of compatible external platform (PC, PDA, etc.) connected to a network (Ethernet, via TCP/IP).

The software applications executed in these external platforms are of the rich client type. During the web access to the HMI 500 or the HMI 500E, each client application transparently loads the software modules that shall be executed locally (plug-in), in order to complete the browser execution.

In a three levels structure (System, Process and Field), such as defined in the SUBSTATION+ and POWERPLANT+ concepts, HMI 500 occupies a primordial place at the System level. From this interface, locally at the Operator Stations, or remotely, the supervision and the system control are carried out. HMI 500E solution plays also an important role at the Process level, being the preferential platform for the local Human Machine Interface of the process.

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## 4 – Technical features of the HMI 500 and HMI 500E applications

| Software | Description |
|---|---|
| Type | Web Server for rich client type applications |
| Scope | SCADA |
| Function | Human Machine Interface |
| Client Applications | Rich Client |

| Interfaces | Description |
|---|---|
| Network | Ethernet |
| Protocol | HTTP(S) |

| Operating system | Description |
|---|---|
| Vendor | Microsoft |
| Versions | WINDOWS XP WINDOWS XP Embedded |

| Application | Equipment | Platform |
|---|---|---|
| HMI 500 | • UC 500 | CLP 500 |
| | • SPS 500 | |
| HMI 500E | • UC 500E | CLP 500 |
| | • DUAL 500E | |

| Functions | Description |
|---|---|
| Login and Logout | • Yes |
| Alarms | • Alarm Lists |
| | • Alarm Summary |
| | • Priorities |
| | • Filters |
| | • Sorting |
| | • Printing |
| | • Acceptance |
| Events | • Event Treatment |

| | |
|---|---|
| | • Event Lists |
| | • Timetag |
| | • Filters |
| | • Printing |
| | • User and System Event Recording |
| Trend Displays | • Real Time |
| | • Archives |
| Reports | • Configurable |
| | • Table formats |
| | • Bus-bar charts |
| | • Pie Charts |
| Schematic Displays | • Configurable |
| | • Single Data Display |
| | • Device Animations |
| | • Bus-bar Charts |
| | • Panning |
| | • Decluttering |
| | • Zooming |
| | • Navigation |
| | • Poke Points |
| Controls and Setpoints | • Yes |
| Tags and Notes | • Yes |

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The following central units and respective platform, and system server, presented in this document, have a specific literature:



The following concepts, presented in this document, have a specific literature: