

1 – Introduction

The UC 500 is a Central Unit from EFACEC, targeted to be used in the CLP 500 platform. It is a modern and flexible solution that uses state of the art technology.

The most important hardware component of this unit is the Industrial PC.

All the PC components are selected from the best of breed in the market in terms of cost effectiveness, reliability and robustness. The UC 500 is available in several configurations, targeted to meet our costumers' specifications.



2 – PC Product Overview

The UC 500 is a rack mounted industrial PC available in several configurations. The chassis was designed to meet the EIA 310C 19" rack mount rugged Industrial PC Chassis, and is specifically engineered for severe industrial environments. It is designed to isolate all the computer components from shock, vibration, heat, dust, sprayed water and moisture. The chassis was tested under the conditions specified in several international standards and it is CE approved. It has a lockable door for dust-proof integrity and running security. The keyboard is protected in a drawer mounted in the rack.

All the components of the UC 500 are labelled, tested and assembled with accordance to the ISO 9001 standards. EFACEC keeps track of the computer components from the supplier to the client in order to achieve EFACEC's quality goals.



3 – Central Unit Features

The most important Central Unit features are:

- Scalable and Distributed Solution
- Several Communications Protocols
- Support of Radio Communications
- Communications with up to 8 Control Centres
- Communications with several RTUs or IEDs
- TCP/IP communication with RTUs or other CCs, using an IEEE 802.3 LAN
- Communication with Acquisition Units or IEDs using Lonworks Field Bus up to 1.25 Mbps
- Synchronisation with a GPS signal
- EMI: FCC Class B approved
- Chassis: CE approved
- Anti-vibration, anti-drop, water-proof, dust and moisture proof
- Removable air filter located at front panel
- Shock absorbing disk drive bay

4 - Technical Characteristics

PC Characteristics	(Minimum)
Microprocessor	Pentium 4
RAM	256 MB
Clock	2 GHz
Floppy	1 x 3.5" (CD-Rom also recommended)
Hard Disk	> 20 GB
Video	Super VGA (2 MB)
Video Resolution	640 x 480
Display (1)	14" Colour
Keyboard (1)	84 keys with track ball
Dimensions (mm)	177 x 438 x 450
Height x Width x Depth	

Communications Interfaces	
Serial Ports	2 RS232 Full Handshake No Galvanic Insulation
Parallel Port (1)	1
Additional Serial Ports(2)	4, 8, 16, 32, 64
Radio Interface (2)	Squelch Input PTT Output
Local Alarms (2)	I/O card
Ethernet Card	Compliant with IEEE 802.3 standards 10 Mbps, 100 Mbps and 1000 Mbps over cable or fibre optic

Power Supply				
Rate (V)	Min. (V)	Max. (V)	Consumption (W)	
220 Vac	198 Vac	242 Vac	≤250 W	
24 Vdc	18 Vdc	32 Vdc	≤250 W	
48 Vdc	36 Vdc	72 Vdc	≤250 W	
110 Vdc	83 Vdc	140 Vdc	≤250 W	

Operating System	
Manufacturer	Microsoft
Version	NT 4.0, Service Pack 6A WinXP
Multitask	Yes
Preemptive	Yes

User's Software	
SCADA	CLP 500 (with Run Time version of Microsoft Access)
Automatic Functions	Yes
Programming Languages	C, C++

Synchronisation	
UC 500 Rule	Master or Slave
Through LAN	1 ms resolution
Through Serial Port	1 s resolution

UC 500 Protocols	
IEC 60870-5-101	Control Centre, RTU
IEC 60870-5-103	Digital Protections
IEC 60870-5-104	Control Centre, RTU, AU
IEC 61850	Control Centre, Digital Protections, IEDs
DNP 3.0	Control Centre, RTU
MODBUS	IEDs, Control Centre
PROFIBUS	IEDs
PROCOM	Digital Protections
SEL Fastmeter	Digital Protections
M-Link	Digital Protections
SPA-Bus	Digital Protections
J-BUS	IEDs, Digital Protections
Insum	IEDs
HARRIS	Control Centre
EFACEC 4F	Control Centre, RTU
EFACEC 4F Ethernet	Control Centre, RTU
EFACEC F4F	Control Centre
EFACEC PUR	Control Centre, RTU
CETT	Control Centre
TG809	Control Centre
SK1703	Control Centre
EDP (Synchronous)	Control Centre
LonWorks	AU, Digital Protections
Siemens UPS	UPS (Uninterruptible Power Supply)
Silcon	UPS (Uninterruptible Power Supply)

UC 500 Maximum Capacity	
Digitals	65536
Measurements	65536
Pulse counters	65536

UC 500 Functionality	
Start Modes	Cold or warm modes
Watchdog	Implemented by Software / Hardware
Architecture	Single or duplicated (manual or automatic changeover)
Local Supervision	Communications diagnosis and/or Trace facilities

Environment	
Storage Temperature	-25°C...+70°C
Operating Temperature	5°C...+55°C
Operating Humidity	8... 95%

Standards	
EN 55022: 1994, Class A	EN 50082-2: 1995 EMI: FCC Class B
EN 61000-3-2: 1995, Class A	EN 61000-4-2: 1995
EN 61000-3-3: 1995	ENV 50140: 1993 EN 61000-4-4: 1995 ENV 50141: 1993 EN 61000-4-8: 1993 ENV 50204: 1994

Notes: (1) – Only available with Human Machine Interface option
(2) – Optional
RTU – Remote Terminal Unit
AU – CLP 500 Platform Acquisition Unit

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