**64 MHz, 32-Bit Floating Point Central Processing Unit
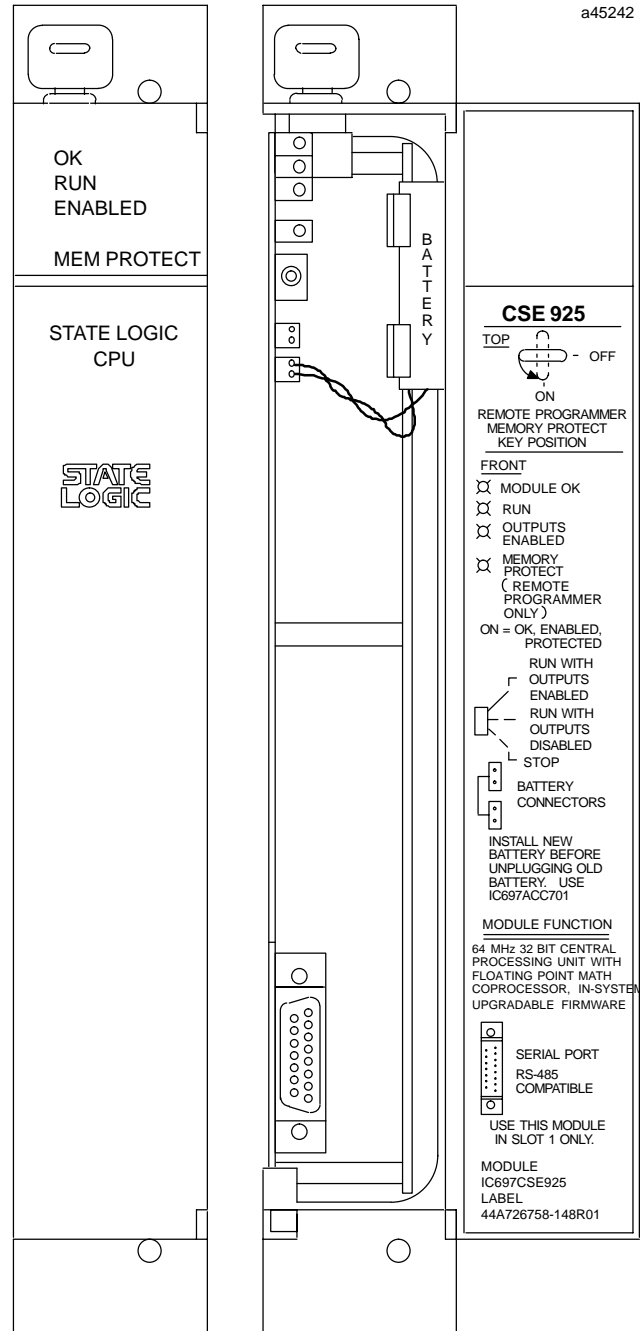1 Mbyte Memory, State Logic**

Features

- Supports State Logic control programming
- Supports floating point calculations
- Single slot CPU.
- 12K inputs and outputs (any mix).
- Up to 8K analog I/O.
- 0.4 microseconds per boolean function.
- 64 MHz, 80486DX2 microprocessor.
- Supports IC660/IC661 and IC697 I/O products.
- Programmed by AD641 and IC641 (MS-DOS®) software products.
- Provides 1 Mbyte of battery-backed memory in the same slot.
- Configurable data and program memory.
- Battery-backed calendar clock.
- Three position operation mode switch.
- Password controlled access.
- Remote programmer keyswitch memory protection
- Four status LEDs.
- Software configuration (No DIP switches or jumpers to set).
- Reference information inside front door.
- In-system upgradable firmware.

Functions

The CSE 925 is a single slot programmable controller CPU which provides State Logic control programming and floating point calculations. The CSE 925 can be programmed in State Logic, Relay Ladder Logic, and C to perform real-time control of machines, processes, and material handling systems.

The AD641 software products are used to program the CSE 925 in State Logic; the IC641 (MS-DOS) software products are used to program in Relay Ladder Logic and C. The IC641 (MS-DOS) software is also used to perform all configuration functions for the CSE 925.

The CSE 925 communicates with I/O and smart option modules over the rack mounted backplane (IC697CHS750, 782, 783, 790, 791) by way of the VME C.1 Standard format.

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1 Mbyte Memory, State Logic

a45243

MEMORY
PROTECT
KEY
SWITCH

B
A
T
T
E
R
Y

OPEN
REPLACEMENT
BATTERY
CONNECTOR

CURRENTLY
INSTALLED
BATTERY
CONNECTOR

1 MBYTE
MEMORY BOARD

CSE 925

TOP

- OFF

ON

REMOTE PROGRAMMER
MEMORY PROTECT
KEY POSITION

FRONT

⌷ MODULE OK
⌷ RUN
⌷ OUTPUTS
     ENABLED
⌷ MEMORY
     PROTECT
     (REMOTE
     PROGRAMMER
     ONLY)
ON = OK, ENABLED,
     PROTECTED

RUN WITH
OUTPUTS
ENABLED
RUN WITH
OUTPUTS
DISABLED
STOP

BATTERY
CONNECTORS

INSTALL NEW
BATTERY BEFORE
UNPLUGGING OLD
BATTERY. USE
IC697ACC701

MODULE FUNCTION

64 MHz 32 BIT CENTRAL
PROCESSING UNIT WITH
FLOATING POINT MATH
COPROCESSOR, IN-SYSTEM
UPGRADABLE FIRMWARE

SERIAL PORT
RS-485
COMPATIBLE

USE THIS MODULE
IN SLOT 1 ONLY

MODULE
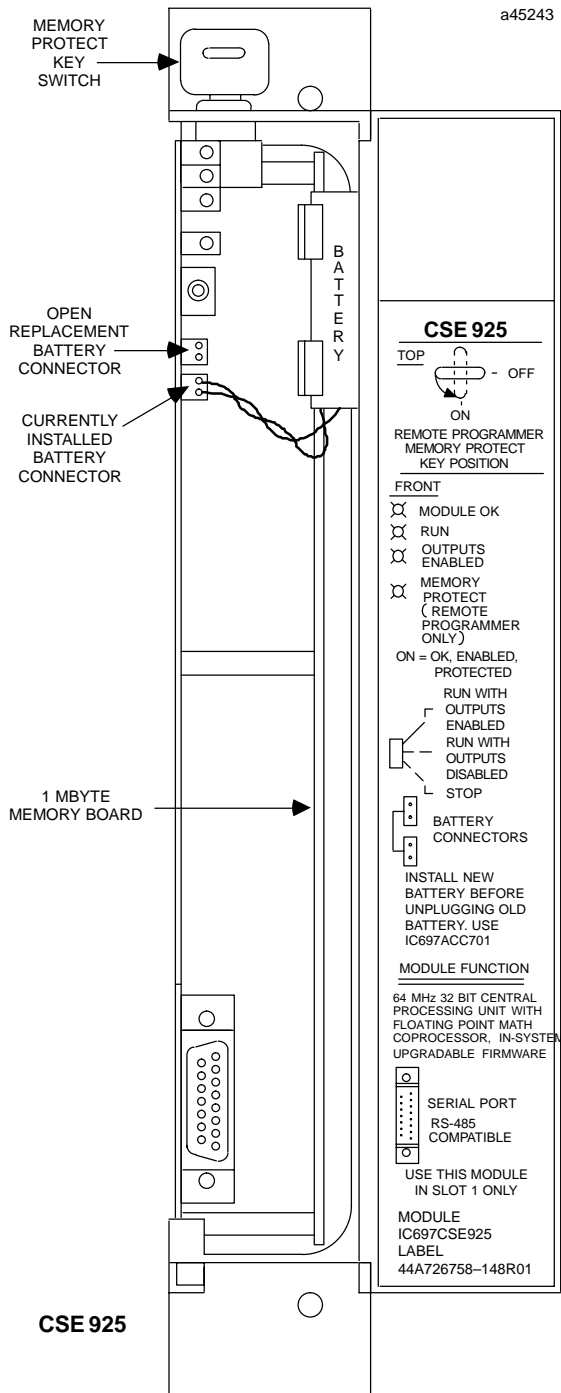IC697CSE925
LABEL
44A726758–148R01

CSE 925

Figure 1. CSE 925 - Location of Major Features

Supported option modules include IC697 LAN Interface modules, Programmable Coprocessor, Alphanumeric Display Coprocessor, Bus Controller for IC660/IC661 I/O products, Communications modules, I/O Link Interface,

and all of the IC697 family of discrete and analog I/O modules.

User Memory

Program and data memory for the CSE 925 is provided by a memory board with 1 Mbyte of battery-backed CMOS RAM. This memory board is an integral part of the CSE 925 module and does not need to be ordered separately.

Operation, Protection, and Module Status

Operation of this module can be controlled by the three-position RUN/STOP switch or remotely by an attached programmer, and AD641 or IC641 (MS-DOS) software. Program and configuration data can be locked through software passwords or manually by the memory protect keyswitch. When the key is in the protected position, program and configuration data cannot be changed. The status of a CPU is indicated by the four green LEDs on the front of the module.

The CSE 925 requires forced air cooling for proper operation in ambient temperatures greater than 40°C (104°F). A fan capable of 70 CFM (including filters) should be located beneath slot 1 of the rack containing the CPU.

Fan assemblies (IC697ACC 721 and IC697ACC724) can be ordered for direct mounting on the IC697 rack. Refer to the applicable *Programmable Controller Installation Manual* for detailed information.

Installation

It is the responsibility of the OEM, system integrator, or end user to properly install the PLC equipment for safe and reliable operation. Product manuals provide detailed information about installation, startup, and proper use of the PLC equipment. The installation manual, shipped with your PLC programming software, describes how to properly install the equipment. If the PLC installation must comply with supported standards, such as FCC or CE Directives, please refer to the *Installation Requirements for Conformance to Standards*, shipped with the PLC programming software, for additional guidelines.

- Installation should not be attempted without referring to the applicable *Programmable Controller Installation Manual.*
- Connect the battery to either of the battery connectors on the module (see Figure 1).
- Put the toggle switch in the STOP position.
- Put the keyswitch in the *Memory Protection OFF* position.

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1 Mbyte Memory, State Logic

- Make sure that rack power is off.

- Install the CSE 925 module in slot 1 of rack 0 (see Figure 2).

- Turn on power.

The module should power up and the top LED should blink. When the diagnostics have completed successfully, the top LED stays on and the second and third LEDs are off. The fourth LED is off if the keyswitch is in the OFF position. The CPU is now ready to be programmed.

After the program has been verified the toggle switch may be moved to the appropriate operation mode position. The LEDs indicate the position of the toggle switch, memory protection status, and the state of the program.

The IC641 (MS-DOS) software is also used to load the State Logic operating system into the CSE 925 CPU module. The operating system is provided on a floppy disk with the CSE 925. The operating system is stored in flash memory on the module. For information on loading the operating system, see the *State Logic Control System User's Manual.*

Figure 2. System Configuration, Serial Connection to Programmer

Serial Port

The 15-pin D-connector provides the connection to an RS-485 compatible serial port on the CPU as shown in Figure 2.

The serial connection is made from the serial port on the CPU to the serial port on the programming computer, or other serial device, through the RS-422/RS-485 to RS-232 Converter (IC690ACC900) or RS-232 to RS-422 Miniconverter (IC690ACC901). This connection can be made with available cables or you may build cables to fit the needs of your particular application. See reference 3 for more information on serial communications.

Configuration

The IC697 CPU and I/O system is configured with IC641 (MS-DOS) programming software. There are no DIP switches or jumpers used to configure the system. The CPU verifies the actual module and rack configuration at power-up and periodically during operation. The actual configuration must be the same as the programmed configuration. Deviations are reported to the CPU alarm processor function for configured fault response. Consult Reference 1 for a description of configuration functions.

Batteries

A lithium battery (IC697ACC701) is installed as shown in Figure 1. This battery maintains program and data memory when power is removed and operates the calendar clock. Be sure to install the new battery before removing the old battery. Specific indication of a low battery state is detailed in Reference 2.

Removing a Module

The instructions below should be followed when removing a module from its slot in a rack.

- Grasp the board firmly at the top and bottom of the board cover with your thumbs on the front of the cover and your fingers on the plastic clips on the back of the cover.

- Squeeze the rack clips on the back of the cover with your fingers to disengage the clip from the rack rail and pull the board firmly to remove it from the backplane connector.

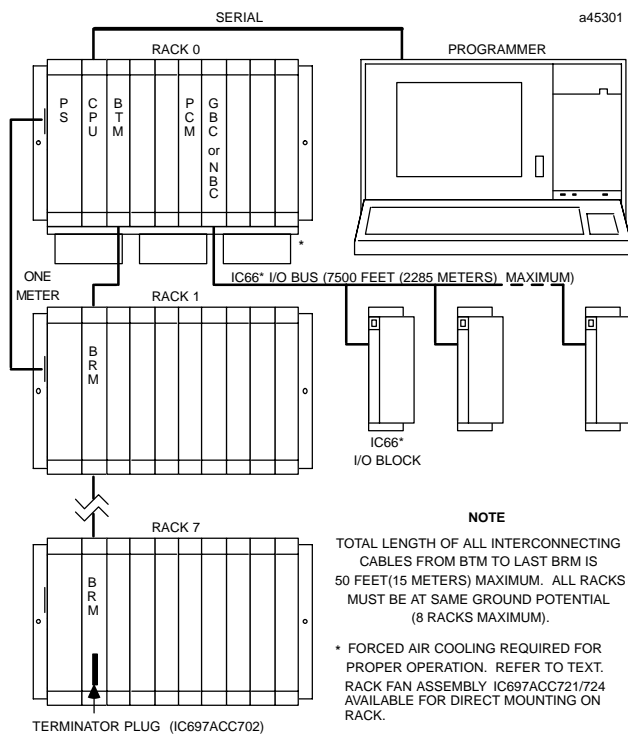- Slide the board along the card guide and remove it from the rack.

**64 MHz, 32-Bit Floating Point Central Processing Unit
1 Mbyte Memory, State Logic**

Table 1. References

Reference	Title
1	Programming Software User's Manual
2	Programmable Controller Reference Manual
3	Programmable Controller Installation Manual
4	State Logic Control System User's Manual

Table 2. Specifications for IC697CSE925 †

Battery	
Shelf life	10 years at 20° C (68° F)
Memory retention	6 months nominal without applied power.
Current required from 5V bus	3.3 Amps nominal
Time of Day Clock accuracy	" 3.5 seconds per day maximum
Elapsed Time Clock (internal timing) accuracy	" .01% maximum
Serial Port	
RS422/485 compatible	Programmer Serial Attachment
VME	System designed to support the VME standard C.1

†   Refer to GFK-0867B, or later for product standards and general specifications.

Table 3. Ordering Information

Description	Catalog Number
Central Processing Unit - 64 MHz, 32-Bit, Floating Point, 1 Mbyte Memory, State Logic	IC697CSE925
Lithium Battery	IC697ACC701
Rack Fan Assembly, 120 VAC Rack Fan Assembly, 240 VAC	IC697ACC721 IC697ACC724

Note: For Conformal Coat option, or Low Temperature Testing option please consult the factory for price and availability.