

Chapter 8

Error Displays

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Error Displays

This chapter presents P965 error displays in alphanumeric order for easy reference. Descriptions and suggested actions are also given.

Several types of error displays appear in the P965. Some are due to errors in P965 operation, and some are due to controller faults.

Upon receiving an error indication, control is returned to the menu level appropriate for modifying the parameters used to invoke the command. The parameters can be changed, and a retry executed. Generally, this results in returning up one menu level from the current operation.

Invalid operator entries generally result in an error display. On some invalid operator entries, the invalid key or keys have no effect, but no error screen is displayed. Upon clearing the error display, a screen appears requesting operator input.

When an error display appears, locate the display in this section. If retries or other suggested actions fail, contact your local Modicon representative or the Modicon Field Support Center in North Andover, Massachusetts. You can contact the Modicon Field Support Center by telephone. The numbers are given in the front of this guide.

Types of Errors

Error Messages are organized in groups. One group pertains to DAP mode. These are listed in Table 8-6. Another group pertains to general MODBUS errors. Other groups of error messages are organized by controller type: 484, 884/M84, and 584/984.

In the error displays shown below, TTT is the controller type.

Unexpected Errors

UNEXPECTED ERROR is a category of error that should not occur. For example, a legitimate 984 error may result from an operation modifying user logic. Since the P965 does not modify user logic, this error should never occur.

If this error, or other errors not supported by the P965, is returned to the P965 from the controller, the Unexpected Error Display appears. The general format of this display is shown in Figure 8-1.

Figure 8-1
Unexpected Error Display

```
TTT.....  
USER.ERROR.nn...  
UNEXPECTED.ERROR  
.....
```

nn specifies the error number.

If an unexpected error occurs, perform the following steps:

- Retry the operation. If this is not successful:
- Power the unit off and on, and retry again.
- In any case, inform Modicon of the error.

If the P965 receives what it believes to be an error message from a controller but cannot classify the message as to USER, SYSTEM, MODBUS, or LINK error, the Unknown Error Display (Figure 8-2) appears.

Figure 8-2
Unknown Error Display

```
.ERROR.DETECTED.  
.....OF.....  
..UNKNOWN.TYPE..  
.....
```

MODBUS Functional Error Messages

In this section the MODBUS functional error displays that you may see are shown.

Table 8-1 describes the MODBUS Functional Errors that may occur, their causes, and suggested actions.

Table 8-1

MODBUS Functional Error
Displays with Suggested
Actions

Error Display	Cause	Suggested Action
TTT..... MODBUS.ERROR.1 ILLEGAL.FUNCTION	Function requested is not allowed	Verify that controller is properly configured and can be started.
TTT..... MODBUS.ERROR.2 ILLEGAL ADDRESS.....	Address is not allowed.	Verify that controller is properly configured and can be started.
TTT..... MODBUS.ERROR.3 ILLEGAL.DATA.OR END.ADDRESS.....	Data or end address is not allowed.	Verify that controller is properly configured and can be started.
TTT..... MODBUS.ERROR.4 SLAVE-ADAPTER ERROR.....	Controller error	Verify that controller is properly configured and can be started.

884/M84 Error Messages

884/M84 Link Errors These link errors, such as Message Ack, should be handled by the P965 internally. In those situations in which the P965 cannot overcome the link error, the Link Error Display, Figure 8-3, appears.

Figure 8-3

Link Error Display

```
TTT.....  
LINK.ERROR....nn  
.....  
.....
```

nn is the link error number.

- **NOTE** For link errors 12, 13, and 14, the third line of the display shows:

```
RESETTING.LINK..
```

and the P965 automatically issues a reset command to the 884 or Micro84.

884/M84 User Errors

These error messages (Table 8-2) may occur in M84 and 884 controllers. Other errors should not occur.

Table 8-2

884/M84 User Error
Displays with Suggested
Actions

Error Display	Cause	Suggested Action
TTT..... USER.ERROR.01..... OTHER.USER..... LOGGED.IN.....	Another user is logged in.	Controller must be logged out.
TTT..... USER.ERROR.02..... INVALID.PASSWORD	Invalid password.	Use valid password.
TTT..... USER.ERROR.04..... CONTROLLER.IS..... RUNNING.....	The attempted action (e.g., trying to clear memory) cannot be performed because the controller is running.	Stop controller. Then perform action.

(continued)

Table 8-2

884/M84 User Error
Displays with Suggested
Actions (Cont.)

Error Display	Cause	Suggested Action
TTT..... USER.ERROR.05..... MEMORY PROTECT.... ON.....	The desired action can not be performed because the memory protect is on.	Memory protect must be unlocked to perform desired action.
TTT..... USER.ERROR.06..... CONTROLLER.IS..... ALREADY.RUNNING.	The attempted action (e.g., trying to start controller) cannot be performed because the controller is running.	Stop controller. Then, perform action.
TTT..... USER.ERROR.07..... CONTROLLER.IS..... NOT.RUNNING.....	Stop controller attempted while controller is not running.	None required.
TTT..... USER.ERROR.08..... CONTROLLER.START FAILED.....	Controller did not start.	Retry controller start. Verify that controller is properly configured.
TTT..... USER.ERROR.09..... NOT.LOGGED.IN.....	User not logged in.	Log in.
TTT..... USER.ERROR.10 CANNOT.PERFORM.... COMMAND.....	Unacceptable command.	Retry command. Verify that controller is properly configured.
TTT..... USER.ERROR.18..... CORRUPT.DATABASE COMMAND.FAILED....	Command failed due to corrupt database.	Verify that controller is properly configured and can be started.
TTT..... USER.ERROR.19..... CAN'T.ACCESS..... PASSWORD.TABLE....	Denied access to password table.	Verify that controller is properly configured and can be started.

(continued)

Table 8-2

884/M84 User Error
Displays with Suggested
Actions (Cont.)

Error Display	Cause	Suggested Action
TTT..... USER.ERROR.21..... UNSUPPORTED..... FEATURE.....	This feature is not supported at this time.	Call Modicon.
TTT..... USER.ERROR.22..... WATCHDOG.TIMER..... EXPIRED.....	Watchdog timer expired.	Verify the controller is properly configured and can be started.
TTT..... USER.ERROR.23..... UNKNOWN_OPCODE..	Corrupted user logic.	Verify that controller is properly configured and can be started.

Other errors should not occur. The general display for these errors contains the error number with no error text, similar to Figure 8-1.

884/M84 System Errors

System errors in the 884 and M84 may give rise to error messages. These are shown in Table 8-3.

Table 8-3

884/M84 System Error
Displays with Suggested
Actions

Error Display	Cause	Suggested Action
TTT..... SYSTEM.ERROR.69.... UNSUPPORTED..... COMMAND.....	Command not allowed	
TTT..... SYSTEM.ERROR.70.... INSUFFICIENT..... PRIVILEGE.....	Level of access not sufficient.	Obtain higher level of access (password)
TTT..... SYSTEM.ERROR.73.... INVALID..... REFERENCE.....	Invalid reference.	Use a valid reference.
TTT..... SYSTEM.ERROR.74.... DISCRETE.NOT..... DISABLED.....	Discrete not disabled.	Disable discrete.
TTT..... SYSTEM.ERROR.92.... TABLE.IS.READ..... ONLY.....	Read only table; cannot be written to.	Verify controller is properly configured.
TTT..... SYSTEM.ERROR.93.... INVALID.TABLE..... OFFSET/LENGTH.....	Invalid table offset/length.	Use valid table or offset length.
TTT..... SYSTEM.ERROR.94.... INVALID.TABLE.....	Invalid table.	Use valid table.
TTT..... SYSTEM.ERROR.95.... INVALID.TABLE..... DATA.....	Invalid table data.	Verify controller is properly configured.
TTT..... SYSTEM.ERROR.97.... INVALID.MEMORY..... ADDRESS.....	Invalid memory address.	Use valid memory address.

584/984 Error Messages

The following error messages may occur with either the 584 or the 984 programmable controller. Table 8-4 shows the error messages, the causes, and gives suggested actions.

Table 8-4

584/984 Error Displays with
Suggested Actions

Error Display	Cause	Suggested Action
T84..... ERROR.01..... INVALID.COMMAND....	Command not allowed	Verify controller is properly configured.
T84..... ERROR.02..... INVALID.ADDRESS.....	Address is invalid.	Use a valid address.
T84..... ERROR.03..... MEMORY.PROTECT.... ON.....	Memory protect is on.	Turn memory protect off.
TTT..... ERROR.07..... INVALID..... REFERENCE/RANGE..	Invalid reference or range.	Use valid reference or range.
TTT..... ERROR.08..... INVALID..... PARAMETER.....	Invalid parameter.	Use valid parameter.
TTT..... ERROR.09..... CONTROLLER.IS..... RUNNING.....	Controller is running.	Stop controller.
TTT..... ERROR.10..... NOT.LOGGED.IN.....	Not logged in.	Log in.
TTT..... ERROR.11..... COIL.NOT..... DISABLED.....	Coil is not disabled.	Disable coil.

(continued)

Table 8-4

584/984 Error Displays with
Suggested Actions (Cont.)

Error Display	Cause	Suggested Action
TTT..... ERROR.13..... ILLEGAL..... CONFIGURATION.....	Illegal configuration.	Reconfigure controller.
984..... ERROR.17..... COIL.DISABLE.NOT ALLOWED.....	Coil disable not allowed. (984 only)	Login and turn memory protect off. Verify controller is properly configured.

484 Error Messages

In addition to unexpected errors, the error messages shown in Table 8-5 may appear when connected to a 484 controller.

Table 8-5

484 Error Messages,
Causes, and Actions

Error Display	Cause	Suggested Action
484..... ERROR.....04 INCORRECT..... ADDRESS.RANGE.....	Address is beyond allowed range.	Change address to fall in assigned range.
484..... ERROR.....05 ILLEGAL..... BOUNDARY.....	Lower member of addressing word pair has odd value.	Change to an even value.
484..... ERROR.....06 ILLEGAL..... COMMAND.....	Does not correspond with valid message types.	No action needed. Controller is reset.
484..... ERROR.....10 INVALID.DATA.....	Invalid data.	Check for invalid element type or reference.

(continued)

Table 8-5

484 Error Messages,
Causes, and Actions (Cont.)

Error Display	Cause	Suggested Action
484..... ERROR..... 11 MEMORY PROTECT.... ON.....	Controller's memory protect is ON.	Set memory protect to OFF.
484..... ERROR..... 12 SYSTEM NOT..... STOPPED.....	Controller running.	Stop controller.

DAP Mode Error Messages

Table 8-6 lists DAP mode error message displays, causes, and suggested actions.

Table 8-6

DAP Mode Error Displays
with Suggested Actions

Error Display	Cause	Suggested Action
P964 ENTRY ERROR CANNOT FORCE COIL WITH 984 IN RUN MODE	Coils can only be forced when controller is stopped.	Go to CMD menu, stop controller and retry.
P964 ENTRY ERROR CANNOT FORCE ENABLED COIL	Coils can only be forced when disabled.	Display coil, press DISABLE, and retry.
P964 ENTRY ERROR COMMAND INVALID WITH CONTROLLER IN RUN MODE	Command can only be performed when controller is stopped.	Go to CMD menu, stop controller, and retry.
P964 ENTRY ERROR COMMAND INVALID WITH MEMORY PROTECT KEY ON	Command can only be performed when memory protect is off.	Turn 984 controller memory protect key to off position. Retry

(continued)

Table 8-6

DAP Mode Error Displays
with Suggested Actions
(Cont.)

Error Display	Cause	Suggested Action
P964 ENTRY ERROR COMMAND INVALID xxxxx NOT VALID	Reference number is outside configured range in controller.	Re-enter reference number within controller configuration, or reconfigure controller.
P964 ENTRY ERROR DELAY TIME xx NOT VALID	Delay time entered not decimal value in correct range.	Re-enter delay time. Must be decimal value from 1 to 20.
P964 ENTRY ERROR MEMORY ADDRESS xxxxxx NOT VALID	Memory address not decimal value in correct range.	Re-enter memory address. Must be decimal value from 300000 to 365535.
P964 ENTRY ERROR REFERENCE NUMBER xxxxx NOT VALID	Reference number not in controller.	Check that reference number is valid type (0xxxx, 1xxxx, 3xxxx, 4xxxx) and is configured in controller.
P964 WARNING 01 SYSTEM ERROR 984 RCVD INVALID COMMAND	Invalid command sent to controller.	1) Press CLEAR and retry. 2) If retries fail, contact Modicon.
P964 WARNING 02 SYSTEM ERROR 984 RCVD INVALID REFERENCE TYPE	Invalid reference type sent to controller.	1) Press CLEAR and retry. 2) If retries fail, contact Modicon.
P964 WARNING 03 SYSTEM ERROR 984 RCVD INVALID COMM PORT NUMBER	Invalid MODBUS or ASCII port number sent to controller.	1) Press CLEAR and retry. 2) If retries fail, contact Modicon.
P964 WARNING 04 SYSTEM ERROR 984 RCVD INVALID MESSAGE PACKET	Message with invalid format sent to controller.	1) Press CLEAR and retry. 2) If retries fail, contact Modicon.
P964 WARNING 05 COMM TIMEOUT ERROR CONNECT FAILED RETRY	No communication within required time.	1) Press RETRY (F2). Screen blanks for 0.5 sec, then retries. 2) If retries fail, contact Modicon.

(continued)

Table 8-6

DAP Mode Error Displays
with Suggested Actions
(Cont.)

Error Display	Cause	Suggested Action
P964 WARNING 06 COMM DATA ERROR REQUEST FAILED RETRY	Invalid communication data sent to controller.	1) Press RETRY (F2). Screen blanks for 0.5 sec, then retries. 2) If retries fail, contact Modicon.
P964 WARNING 07 COMM TIMEOUT ERROR REQUEST ABORTED RETRY CNCL	No communication within required time. Request not acted on.	1) Press RETRY (F2). Screen blanks for 0.5 sec, then retries. 2) Press CNCL (F4) to return to previous display. 3) If retries fail, contact Modicon.
► NOTE Press the CLEAR key to erase the error message from the screen. No retry is performed when the CLEAR key is pressed.		
P964 WARNING 08 COMM DATA ERROR REQUEST ABORTED RETRY CNCL	Invalid communication data sent to controller. Request not acted on.	1) Press RETRY (F2). Screen blanks for 0.5 sec, then retries. 2) Press CNCL (F4) to return to previous display. 3) If retries fail, contact Modicon.
► NOTE Press the CLEAR key to erase the error message from the screen. No retry is performed when the CLEAR key is pressed.		
984 START ERR 01 NO EOL DETECTED OR BAD NUMBER OF SEGMENTS	No end of logic node found or illegal number of logic segments.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail, contact Modicon.
984 START ERR 02 STATE RAM TEST FAILED	Test of random access memory in controller failed.	1) Press CLEAR and retry. 2) Replace 984 IOP board. 3) If retries fail, contact Modicon.
984 START ERR 03 START OF NETWORK NODE DID NOT START SEGMENT	No start of network node at beginning of logic segment.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail, contact Modicon.
984 START ERR 04 MULTI-RATE SOLVE TABLE IS INVALID	Invalid multi-rate solve table in 984 controller.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail, contact Modicon.

(continued)

Table 8-6

DAP Mode Error Displays
with Suggested Actions
(Cont.)

Error Display	Cause	Suggested Action
984 START ERR 05 ILLEGAL PERIPHERAL INTERVENTION	Illegal peripheral intervention.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail, contact Modicon.
984 START ERR 06 984 HAS NOT YET BEEN CONFIGURED	984 controller must be configured before communicating with P964.	1) Load user data tape OR 2) Configure controller with P190 and AS-T984-004.
984 START ERR 07 984 MEMORY PARITY ERROR	Parity error detected in 984 controller memory.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail contact Modicon.
984 START ERR 08 984 PERIPHERAL PORT STOP	Peripheral port error detected in controller.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail contact Modicon.
984 START ERR 09 ILLEGAL 984 CONFIGURATION	Errors detected in configuration of controller.	1) Reload user data tape OR 2) Reconfigure 984 using P190 and AS-T984-004. 3) Replace memory board. 4) If retries fail, contact Modicon.
984 START ERR 10 COIL IS DISABLED WITH 984 IN RUN MODE	Detected disabling of coil with 984 running.	1) Press CLEAR and retry. 2) Reload user data tape. 3) If retries fail, contact Modicon.
984 START ERR 11 CHECKSUM ERROR IN 984 LOGIC	Checksum error detected in 984 controller logic.	1) Press CLEAR and retry. 2) Reload user data tape. 3) Replace memory board. 4) If retries fail, contact Modicon.
984 START ERR 12 INVALID NODE IN 984 LOGIC	Invalid node type detected in 984 controller logic.	1) Press CLEAR and retry. 2) Reload user data tape. 3) Check for tape and controller compatibility. 4) If retries fail, contact Modicon.

(continued)

Table 8-6

**DAP Mode Error Displays
with Suggested Actions
(Cont.)**

Error Display	Cause	Suggested Action
984 START ERR 13 INVALID TRAFFIC COP TYPE	Invalid traffic cop type detected in controller.	1) Press CLEAR and retry. 2) Check controller program for interference with traffic cop area. 3) Replace memory board. 4) If retries fail, contact Modicon.
984 START ERR 14 984 FAILED CPU DIAGNOSTIC TEST	984 controller failed diagnostic test.	1) Press CLEAR and retry. 2) Replace CPU board. 3) If retries fail, contact Modicon.
984 START ERR 15 ERROR IN 984 REAL TIME CLOCK	Error detected in 984 real time clock	1) Press CLEAR and retry. 2) Replace CPU board. 3) If retries fail, contact Modicon.
984 START ERR 16 984 WATCHDOG TIMER EXPIRED	984 watch dog timer not reset within specified time.	1) Press CLEAR and retry. 2) Check program for too many DX blocks. 3) If retries fail, contact Modicon.
984 SYMPTOM 05 PROM CHECKSUM PROBABLE CAUSE EXEC PROM PACK	Controller will not run due to PROM checksum error.	1) Press CLEAR and retry. 2) Replace controller exec PROM pack. 3) If retries fail, call Modicon.
984 SYMPTOM 10 MEMORY ERROR PROBABLE CAUSE: MEMORY.BOARD	Controller will not run due to page 0 memory error.	1) Press CLEAR and retry. 2) Replace memory board. 3) If retries fail, call Modicon.
984 SYMPTOM 20 MEMORY ERROR PROBABLE CAUSE: MEMORY BOARD	Controller will not run due to page F memory error.	1) Press CLEAR and retry. 2) Replace memory board. 3) If retries fail, contact Modicon.
984 SYMPTOM 30 MICROCODE ERROR PROBABLE CAUSE: CPU BOARD	Controller will not run due to illegal microcode error.	1) Press CLEAR and retry. 2) Replace CPU board. 3) If retries fail, contact Modicon.

(continued)

Table 8-6

DAP Mode Error Displays
with Suggested Actions
(Cont.)

Error Display	Cause	Suggested Action
984 SYMPTOM 40 MINICODE ERROR PROBABLE CAUSE: CPU BOARD	Controller will not run due to illegal minicode error.	1) Press CLEAR and retry. 2) Replace CPU board. 3) If retries fail, contact Modicon.
984 SYMPTOM 50 BAD PORT PARAM PROBABLE CAUSE: MEMORY BOARD	984 will not run due to invalid port parameter.	1) Press CLEAR and retry. 2) Replace memory board. 3) If retries fail, contact Modicon.
984 SYMPTOM 60 MEM PARITY ERROR PROBABLE CAUSE: MEMORY BOARD	Controller will not run due to parity error in memory.	1) Press CLEAR and retry. 2) Replace memory board. 3) If retries fail, contact Modicon.
984 SYMPTOM 70 DIM AWARENESS PROBABLE CAUSE: MEMORY BOARD	Controller will not run unless configured.	1) Configure 984 using P190 and AS-T984-204. 2) Retry communications.
984 SYMPTOM 100 P964 RCVD UNKNWN DEAD ERROR CODE CONTACT MODICON	P964 received an unknown error code from the 984.	1) Retry operation. 2) If retries fail, contact Modicon.
984 WARNING 100 P964 RCVD UNKNWN RAP ERROR CODE CONTACT MODICON	P964 received an unknown error code from the 984.	1) Retry operation. 2) If retries fail, contact Modicon.

584/984 Stopcode Error Messages

Whenever a START command fails to cause a 584 or 984 controller to begin running, the Unable to Start Display (Figure 8-4) appears.

Figure 8-4

Unable to Start Display

```
UNABLE.TO.START.
PC.....
.....
.....
```


Press the CLEAR key to display the stopcode value, as shown in the 584/984 Stopcode Error Display, Figure 8-5.

Figure 8-5

584/984 Stopcode Error
Display

```
UNABLE.TO.START.
PC.....
STOP.CODE.IS....
.....xxxx.....
```

xxxx — the hexadecimal value of the stopcode.

CLEAR — returns the P965 to the display which originated the START request.

Table 8-7 lists the four-digit hexadecimal codes and the meaning for each code.

Table 8-7

Stopped Controller Error
Displays with Suggested
Action

FFFF	Controller unhealthy
8000	Controller stopped
4000	Bad I/O traffic cop
2000	Controller in dim awareness
1000	Bad port intervention
0800	Bad segment scheduler
0400	SON did not start segment
0200	Bad power-down checksum
0100	Bad number of DOIL-EOL
0080	Watchdog expired
0040	Real time clock failed
0020	Bad coil used table
0010	Remote I/O option failed
0008	Illegal node type used
0004	User logic cksum error
0002	Discretes disabled error
0001	Bad configuration

Suggested Action Using a P190 or an IBM PC, verify that controller has a valid configuration and can be started. Reference appropriate controller user manual for corrective action.

The four-digit number in the Stop Code Error Display, Figure 8-5, indicates either a single error or the hexadecimal no-carry sum of two or more of the errors listed in Table 8-7. For example:

```
Controller stopped.....8000
Bad coil used table.....0020
Illegal node type used.....0008
User logic cksum error.....0004
Stopcode error.....802C
```