

## Troubleshooting

### Chapter Objectives

In this chapter, we tell you:

- about the indicators on the module front plate
- how to use the indicators for troubleshooting the module

### Fault Conditions

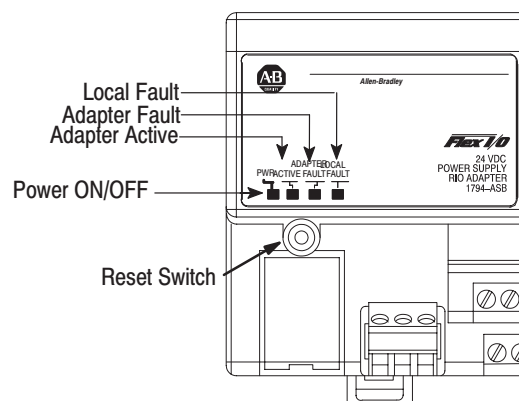
Three conditions can cause the remote I/O adapter to declare a communication fault.

- no remote I/O (link) communication for more than 100ms
- no commands issued to this address over the remote I/O link within the last 255 link transactions
- communication is lost to a module when Rack Fault Select is enabled

When any of these conditions exist, the adapter will:

- reset all digital outputs or leave them in their last state (depending on the position of the last state switch, **S2-1**). Refer to page 2–9 for an explanation of analog module responses.

A communication fault will be automatically cleared by a command from the processor if PRL (processor restart lockout) is not selected, or by pressing the reset switch on the front of the module if PRL is selected.

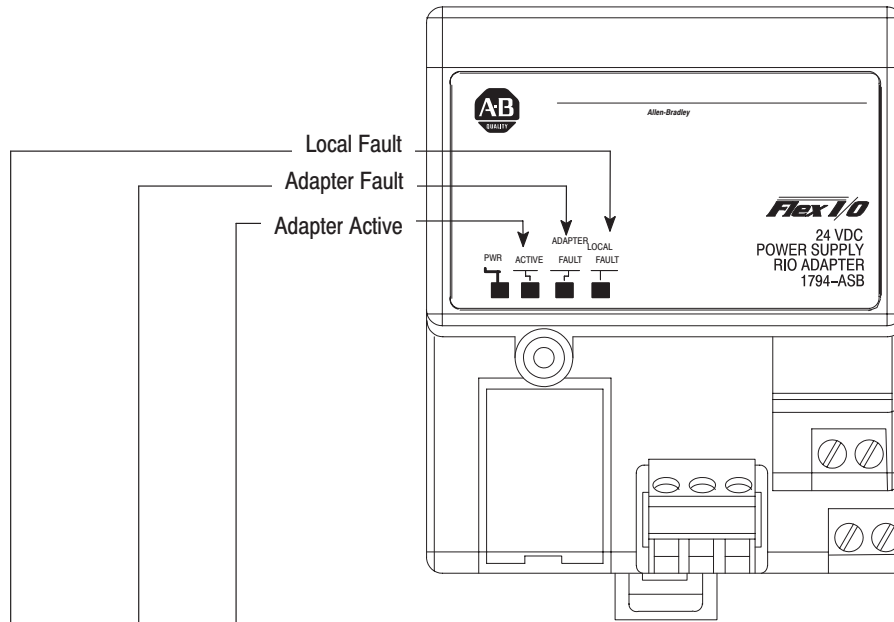


**Important:** Cycling power to the adapter will also reset faults. However, any queued block transfers will be lost, and all outputs will turn off, regardless of the position of the last state switch.

### Troubleshooting with the Indicator Lights

The module has indicators on the front plate as shown below. Use these indicators for troubleshooting the module. The following tables describes problems that may occur, probable causes, and recommended courses of action.

**Table 4.A  
Remote I/O System Troubleshooting Guide**



**Communication States and Module Display**

Local Fault	Adapter Fault	Adapter Active	Operating State	Actions	Fault Reset
Off	Off	On	Normal Communications	Outputs enabled. Communicating with scanner	Not applicable
Off	Off	Blinking	Program or Test mode	Outputs disabled Communicating with scanner Sending current input status back to scanner.	Not applicable
Off	Off	Off	Communication (lack of communications)	All modules; digital outputs in the rack follow HLS setting. Refer to page 2-9 for analog output action.	Resume proper communications (if no processor restart lockout)
Off	Blinking alternately		Processor lockout in effect during communications by scanner	Outputs follow last state switch setting. No replies sent to scanner	Press Reset button on front of adapter module (or cycle power) and resume proper communication.

**Module Faults**

Local Fault	Adapter Fault	Adapter Active	Fault Condition	Actions	Fault Reset
On	On	Off	Noise problems on I/O bus	All outputs off. Communications off.	Cycle power. (This fault is a fatal fault.)
On	Off	Following Link Status	Different module installed replacing removed module.	Old inputs maintained. Outputs set to zero.	Auto-reset when incorrect module is removed; or cycle power to establish new identification for module.
Blinking	Off	On	Module not responding. Possibly module removed under power. Only module removed is affected.	Module not responding: Old inputs maintained. Outputs set to zero. All other modules: Outputs active (enabled). Sending current input status back to scanner.	Replace same module; or cycle power to establish new identification for module.
Processor in RUN mode Rack Fault Select NOT enabled					

Module Faults					
Local Fault	Adapter Fault	Adapter Active	Fault Condition	Actions	Fault Reset
Blinking	OFF	Blinking	Module not responding. Possibly module removed under power. Only module removed is affected.	Module not responding: Old inputs maintained. Outputs set to zero. All other modules: Outputs disabled. Sending current input status back to scanner.	Replace same module; or cycle power to establish new identification for module.
Processor in PROG/TEST mode Rack Fault Select NOT enabled					
Blinking	Off	Blinking	Module not responding. Possibly module removed under power. Only module removed is affected.	Module not responding. All outputs set to 0. All other modules; digital outputs in the rack follow HLS setting. Refer to page 2-9 for analog output action. No replies sent to scanner.	Replace same module; or cycle power to establish new identification for module.
Processor in RUN/PROG/TEST Rack Fault Select enabled					

Configuration Faults					
Local Fault	Adapter Fault	Adapter Active	Fault Condition	Actions	Fault Reset
Off	Blinking in unison		Incorrect starting I/O group number.	Not applicable.	Turn power off. Set SW1 and SW2 correctly. Turn power on.
On	On	On	Incorrect baud rate setting.		
Blinking in sequence			Another adapter on the link has the same address.		
Blinking	On	Off	Illegal module placement – compact addressing mode selected.	Not applicable.	Correct module placement and cycle power.

Additional Faults and Module Displays					
Local Fault	Adapter Fault	Adapter Active	Fault Condition	Actions	Fault Reset
Off	On	Off	Random Access Memory fault.	Reset outputs. Stop communicating on remote I/O link.	Cycle power. (This may not correct fault.) If this does not correct the fault, replace the module with a known good module, and return the bad module to the factory for repair.
			Read Only Memory fault (on powerup only).	Outputs remain reset. Communication never starts.	
			Internal watchdog timer timed out.	Try to reset outputs. Stops communicating on the remote I/O link.	

## Chapter Summary

In this chapter you learned how to use the indicators on the front of the module to troubleshoot your module.