

### Chapter 11 Diagnosis Function

Enet communication module has a function to diagnose symptoms occurred after power on, during normal operation and in test mode. Type of the diagnosis function is described in the table below.

Item	Description	Remarks
Online mode	1) Memory diagnosis of communication module 2) Diagnosis of common-used RAM 3) PLC error 4) Controller (961A) error during communication 5) Error on physical layer during communication 6) Error on program execution during operation	Diagnosed during Run after powered.
Test mode	1) System/common-used RAM error & physical layer error in test mode - System RAM error - Common-used RAM interface error - Physical layer error	

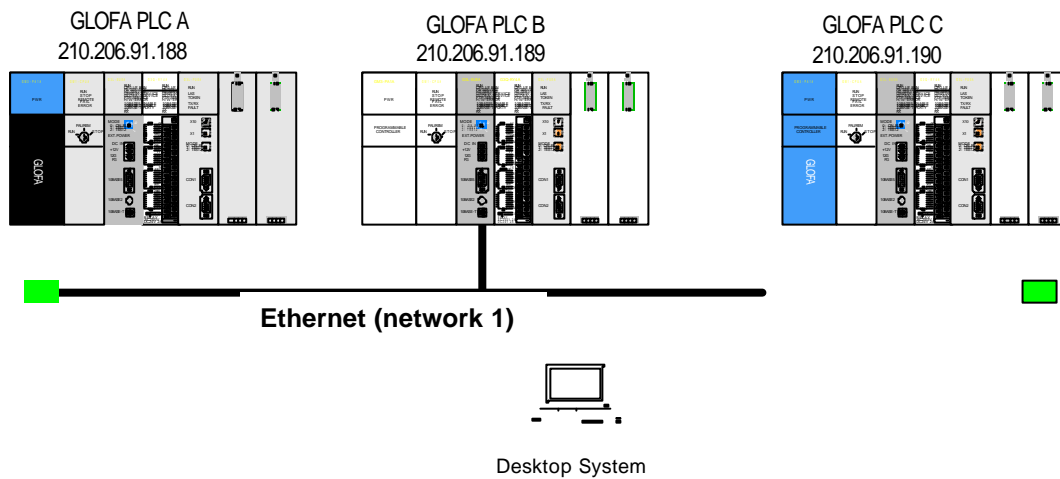
#### Remark

Diagnosis of Enet communication module is executed by the mode switch attached in front of communication module.

- A) Online mode(communication stations connected) method : Self-diagnosis + communication diagnosis
- B) Test mode method: System/common-used RAM diagnosis + physical layer diagnosis

### 11.1 Diagnosis Function by Online Mode

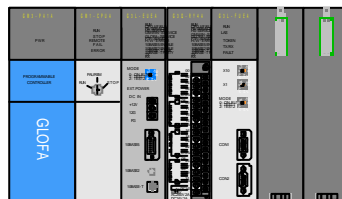
- 1) Prepare communication module necessary for system configuration, set the mode switch attached on communication module to online status and then perform basic setting using frame editor so to download to PLC.
- 2) Connect communication module with cable after system configuration as shown in [Figure 11.1].(Thick copper cable(10BASE5), Thin copper cable(10BASE2), Twist cable(10BASE-T))
- 3) If powered on, communication module keeping initializing self-diagnosis and communication displays the following results through LED. Refer to ' Appendix A1 LED display specification' for details of LED.



[Figure 11.1] System configuration

### 11.2 Diagnosis Function by Test Mode

- 1) Prepare 1 communication module and set the mode switch attached on communication module to test mode and then perform basic setting using frame editor so to download to PLC.
- 2) Let the system configured as in [Figure 11.2] without cable connected.
- 3) If powered on, communication module keeping physical layer diagnosis and interface diagnosis displays the following results through LED.



[Figure 11.2] System configuration

Error and symptoms occurred during the test above are described in the table below.

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Class	Error type	LED Status								Description
		0	1	2	3	4	5	6	7	
ECM_01	If powered ON	○	○	○	○	○	○	○	○	Program Start
ECM_02		○	○	○	○	○	○	●	○	System RAM test
ECM_03		●	○	○	○	○	●	○	○	Common-used RAM test
ECM_04		●	●	○	○	○	○	○	○	CPU I/F run
ECM_05		●	●	○	○	○	○	○	○	Controller 961A initializing
ECM_06		●	●	○	○	○	○	○	○	Task complete -> Communication start
ECM_07	During normal operation	●	●	*	○	○	○	○	Function Block in service	
ECM_08		●	●	○	●	○	○	○	HS link in service	
ECM_09		●	●	○	○	●	○	○	GMWIN being connected	
ECM_10		●	●	○	○	○	●	○	Exclusive communication in service(On if in TCP communication, Flickering if in UDP communication )	
ECM_11		LEDs turned On simultaneously if various services are executed.								
ECM_12	Error when initialized	○	○	○	○	○	○	●	●	System test error
ECM_13		●	○	○	○	○	●	○	●	Common used RAM error
ECM_14		●	●	○	○	●	○	○	●	Controller initializing error
ECM_15		○	○	○	○	●	○	○	○	Poles of 10BASE-T cable incorrect
ECM_16	Error during Run	●	●	○	○	○	○	●	●	Controller 961A re-initializing error
ECM_17		●	●	○	○	○	○	●	○	Socket error
ECM_18		●	○	○	○	○	○	○	○	CPU error

Class	Error type	LED Status								Description
		8	9	10	11	12	13	14	15	
ECM_19	During Run	○	○	●	○	○	○	*	*	During 10BASE5 operation
ECM_20		○	○	○	●	○	○	*	*	During 10BASE2 operation
ECM_21		○	○	○	○	●	●	*	*	During 10BASE-T operation
ECM_22	Error <sup>(Note1)</sup> during Run	○	○	●	○	○	○	●	●	Communication module or 961A error (10BASE5)
ECM_23		○	○	●	○	○	○	○	○	Communication module or 961A error
ECM_24		○	○	○	●	○	○	●	●	Communication module or 961A error (10BASE2)
ECM_25		○	○	○	●	○	○	○	○	Communication module or 961A error
ECM_26		○	○	●	○	○	○	○	○	Single 10BASE-T on network
ECM_27		○	○	○	○	●	●	●	●	Communication module or 961A error (10BASE5)
ECM_28		○	○	○	○	●	●	○	○	Communication module or 961A error (10BASE5)

● : On    ○ : Off    \* : Flickering

\* Note1) If LED is displayed as above by error occurred in program, it means abnormal status though it may be

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misunderstood as normal operation.