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Section 1 Operating Procedure

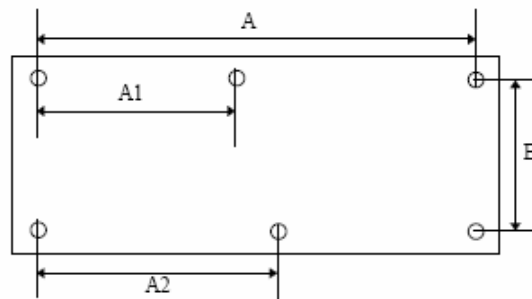
1. Introduction

The H-series PLC is a family of small, low cost, single-board Programmable Logic Controllers (PLCs). Presently, the series spans from the T20H with 12 inputs, 8 outputs to the T64H with 40 inputs and 24 outputs. Members of the H-series controller family differ mainly in the number of I/Os (inputs/outputs), and the type of I/Os they carry (relay or transistor outputs, PNP or NPN types, opto-isolator inputs or high voltage inputs, etc). Since each different PLC model has different wiring requirements, please refer to their respective Installation Guide on the wiring methods and installation details. The number of I/Os, timers, counters, internal relays as well as the maximum allowable program steps are also stated in the Installation Guide.

This manual is to be used with all the current and future H-series PLCs. Presently they include the T20H-npn, T28H-Relay, T44H-pnp, T44H-npn and the T64H-Relay. New models may be introduced as and when determined by market demand. The following table summarizes the number of I/Os, timers, counters and internal relays for each existing model:

Model	Inputs	Outputs	Internal Relays	Timers	Counters	Maximum Program Steps
T20H-npn	12	8	128	20	20	400
T28H-Relay	16	12	128	20	20	400
T44H-npn/pnp	28	16	128	20	20	400
T64H-Relay	40	24	256	40	40	800

Position of Locating Pin for H-series PLCs



Model	A(mm)	B(mm)	A1(mm)	A2(mm)
T20H-npn	78.11	83.19	-	-
T44H-npn	139.7	106.68	-	-
T28H-Relay	159.39	87.00	-	-
T40H-Relay	186.06	93.98	83.82	83.82
T64H-Relay	182.25	113.67	-	-

2. Programming

Section 3 Command/Response Format

This section describes the detailed formats of the command and response blocks for the entire H-series PLC host-link commands. Only the formats for the point-to-point communication system are presented, but all these commands are available to the multi-point system as well. To use a command for multi-point system, simply add the device ID (@nn) before the command header and the FCS at the end of the data (See Section 2 for detailed description of multipoint communication command format).

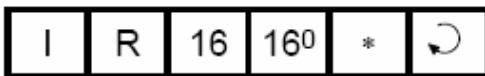
Since different models of PLCs have different maximum number of inputs, outputs, internal relays, timers and counters, attempts to send commands to an invalid address will result in an error response from the controller. For commands that read ALL the channels such as "RIAL", the response string will contain up to the maximum number of channels available on that PLC. The maximum channel numbers stated in the subsequent parts of this manual is based on the **assumption** that the PLC has 96 inputs, 64 outputs, 256 internal relays, 64 timers and 64 counters. The actual limits on your PLC can be observed during the transfer of your TRiLOGI program into the controller. You should work with the actual limit of the PLC model you are using and not what's stated in the following sections.

1. Device ID Read

Command Format



Response Format



Device ID (00 to FF)

The device ID is to be used for multi-point communication protocol where the host computer can selectively communicate with any controller connected to a common RS485 bus (see Section 2 for details). The ID has no effect for point-to-point communication.

The device ID is stored in the PLC's EEPROM and therefore will remain with the controller until it is next changed.

2. Device ID Write

Conditions of Sale and Product Warranty

Triangle Research International Pte Ltd (Singapore) and the Buyer agree to the following terms and conditions of Sale and Purchase:

1. The H-series Ladder Logic Programmable Controllers which includes T20H/T28H/T44H/T40H/T64H etc is guaranteed against defects in materials or workmanship for a period of one year from the date of registered purchase. Any unit which is found to be defective will, at the discretion of Triangle Research, be repaired or replaced.
2. Triangle Research will not be responsible for the repair or replacement of any unit damaged by user modification, negligence, abuse and mishandling, or improper installation.
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