Compumotor

TM8 Module—Thumbwheel Adaptor

Parker
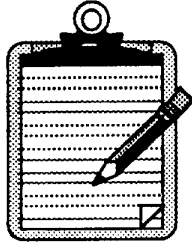
User Guide Change Summary

The following is a summary of the primary changes to this user guide since the last version was released. This user guide, version 88-011853-01B, supersedes version 88-011853-01A.

When a user guide is updated, the new or changed text is differentiated with a change bar in the right margin (this paragraph is an example).

The entire user guide has been changed according to the new Compumotor user guide styles, format, and illustration standards. Technical changes are summarized below.

Changes

Output Electrical Specifications have been changed to reflect the changes or upgrages to the product.

The Module Operation section has been changed to reflect the changes or upgrages to the product.

Introduction

This user guide is designed to familiarize you with the electrical specifications of the TM8 Module. Refer to the user guide that accompanied your Compumotor product for module wiring, setup, configuration, and command interaction instructions.
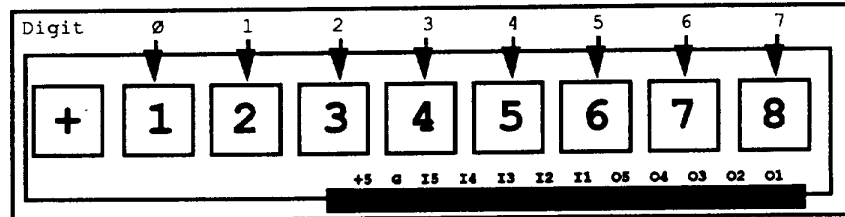

Figure 1. TM8 Module (Digits 0 - 7)

Environmental Constraints

The TM8 Module must be operated in a noncontaminating environment. The TM8 Module's circuitry cables and thumbwheels must be free from atmospheric contaminants, electrical noise, or extreme temperatures.

❑   Storage Temperature: -40°F to 185°·F (-40°C to +85°C)
❑   Operating Temperature: 32°F to 122°F (0°C to 50°C) with adequate air flow

Cabling Specifications

Compumotor strongly recommends that the cables to the TM8 Module be shielded to prevent noise from contaminating the data.

❑   Maximum wire length: 10' maximum length
❑   Minimum wire gauge: 22 AWG

Electrical Specifications

❑   Power requirements: Supply Voltage of 4.75V to 5.25V relative to GND

❑   I (current) supply max: 50mA

❑   GND: Ground input

❑   Outputs o1—o5 are TTL compatible and are active low. o1 represents the thumbwheels LSB and o4 the MSB. o5 represents the sign bit (+ is represented by a TTL high voltage, - is represented by a TTL low voltage).

❑   Outputs must be pulled-up externally. They can be pulled up to 5-28VDC through resistors which limit the on-state current to 20mA or less. Compumotor SX, ZX, and Model 500 products provide appropriate pull-ups.

❑   Outputs can sink up to 20mA.

❑   Inputs I1—I5 are active low. Thry have TTL compatible thresholds and can withstand 24V (maximum).

Module Operation

You can use TM8 Module's Inputs I1—I3 to select and activate one of the eight thumbwheel digits. You can use I4 and I5 as TM8 Module enable low and high respectively. Both enables must be active for the TM8 Module to operate. I5 is pulled-up internally and may be pulled low to disable the unit. I6 must be pulled low to enable the unit. The selected thumbwheel places an active low BCD value at o1—o4. o5 always represents the state of the TM8 Module's sign digit with a negative sign represented as an active low signal.

Inputs

I5 is an enable input. It must be at a high level for the TM8 Module to be active. (I5 is internally pulled-up to +5V).

I4 is an enable input. It must be pulled at a low level for the TM8 Module to be active. (I6 is internally pulled-up to +5V).

I1—I3 are digit select inputs (refer to Figure 1 for digit location).

Outputs

01—05 are active low signals.

❑ Q1 represents the LSB of the selected digit
❑ O4 represents the MSB of the selected digit
❑ O5 represents the sign bit—a negative sign (-) = low and a positive sign (+)= high.

I1	I2	I3	I4	I5	Digit Select
Low	Low	Low	Low	High	0
High	Low	Low	Low	High	1
Low	High	Low	Low	High	2
High	High	Low	Low	High	3
Low	Low	High	Low	High	4
High	Low	High	Low	High	5
Low	High	High	Low	High	6
X	X	X	High	X	7
X	X	X	X	X	TM8 Disabled
X	X	X	X	X	TM8 Disabled

Table 1. TM8 Module Digit Locations (Refer to ZX User Guide)

TM8 Module Configuration

Refer to the Compumotor User Guide that accompanied the product you are using (Model 500, SX, or ZX) for system setup and X language thumbwheel programming examples. Figure 2 shows the dimensional specifications of the TM8 Module.
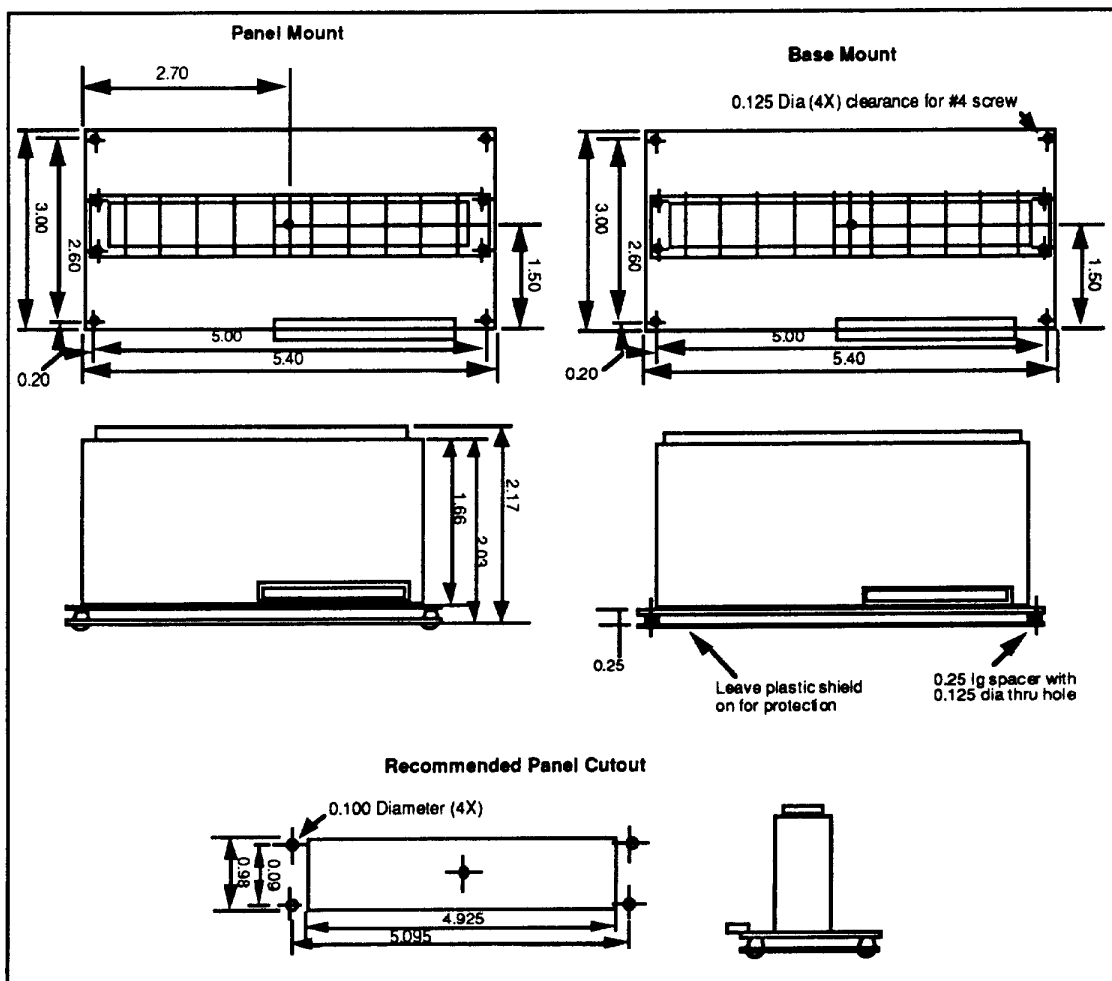

Figure 2. TM8 Module Dimensions