Technical Guide for Thumbwheel Switches Refer to the datasheet for individual Thumbwheel Switch models for specific information on each.

CSM_ThumbwheelSwitch_TG_E_2_1

Explanation of Common Terms
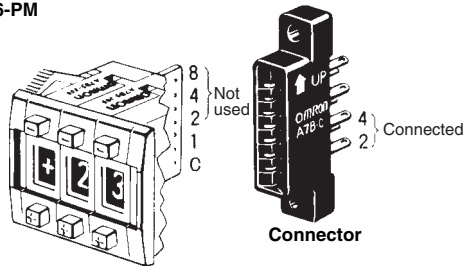
Output Codes

Term	Meaning
Binary Code	Combined 2-value ("0" and "1," "OFF" and "ON," etc.) sign.
Decimal Code	Uses the ten digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.
Binary Coded Decimal Code	Each decimal number is represented by a binary code (see following table).
Binary Coded Hexadecimal Code	Each hexadecimal numeral is represented by a binary code. 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F represent the sixteen possible values.

+/− Dial Display ("-PM" Models)

It is possible to produce 06-type models (binary coded decimal code) that display "+, −, +...−" instead of "1, 2, 3...9".
The model numbers used for this type of Switch are A7□-206-PM and A7□-206-PM-1. Below is an example of the A7BS-206-PM. The Switch's output terminal 1 and common terminal are used for binary output.

Thumbwheel Switch A7BS-206-PM

Connector

Example of A7BS-206-PM

Model	Switch Unit or Connector	Common terminal number	Terminals connected to common			
A7BS	Switch Unit	C	1	2	4	8
	Connector	2	4	5	6	7
Dial	+ (0)					
	− (1)	●				
	+ (2)		●			
	− (3)	●	●			
	+ (4)			●		
	− (5)	●		●		
	+ (6)		●	●		
	− (7)	●	●	●		
	+ (8)				●	
	− (9)	●			●	

Note: 1. The solid dot ● indicates that the internal switch is ON.
2. Numbers enclosed in parentheses are the dial displays for the A7BS-206.
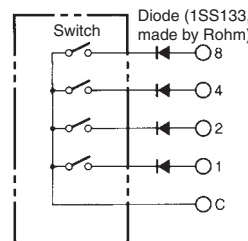
Attaching Stoppers

Stoppers are mechanisms for preventing the wheels rotating outside set ranges. There are internal stoppers that are set at setup and external stoppers that can be set as required at any time. For example, a wheel that normally displays any number in the range 0 to 9 can be restricted to the range 0 to 5 using a stopper.
- Add -S□□ to the suffix, specifying the range in the blanks.
  Example: A7PS-203-S05

- Units to which stoppers can be attached are the A7DP, A7D, A7BS, A7BL, A7PS, A7PH, and A7AS. Consult your OMRON representative for details on individual model numbers.
- On the outside of the A7BS-□-S is a Stopper Pin with which the user can make any setting.
- The A7CN-2, A7CN-1, A7CN-L2, A7MD, and A7MA cannot be equipped with stoppers.
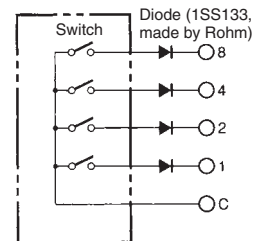
Built-in Diodes

"-D" Models (Cathode Common)

Applicable Models:
- A7BS-207/-255
- A7BL-207
- A7PS-207/-255
- A7PH-207

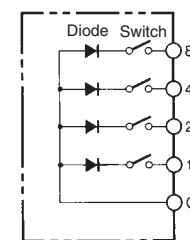**"-D1" Models (Anode Common)** (Special specification)

Applicable Models:
- A7BS-207
- A7PS-207
- A7PH-207

Note: The A7MD has special specifications (anode common). Be sure to connect the terminals with the correct polarity.

The configuration for the A7MD-106-P-D is shown below.

Note: The diode (DAP202K, made by Rohm) is installed inside the case.