

# Large Seven Segment Display Modules

*Innovative  
Technology  
for an  
evolving market*



## FP Electronics

6030 Ambler Drive,  
Mississauga, Ontario,  
L4W 2P1

Phone: 905-624-3020

Fax: 905-238-3141

Email: sales@fpelectronics.com

Website: www.fpelectronics.com

**ISO 9001 CERTIFIED**

**MARKIV**  
I D S Information Display Systems



For large numeric displays these modules offer the optimum in visibility, reliability and economy.

Applications include:

- Time/Temperature Displays
- Gas Price Signs
- Scoreboards
- Tote Boards
- Speed Limit Signs
- Bus Route Signs

Consisting of seven magnetically operated, light-reflecting segments they can display digits 0-9 plus a limited selection of symbols and alphabetic characters.

They are available in character heights of 160mm (6 inches), 230mm (9 inches), 305mm (12 inches) and 457mm (18 inches).

Standard colors are white and fluorescent yellow. Other colors are available on request.

The segments are coated with white or a fluorescent colored, fade resistant material to ensure visual impact over an extreme ambient light range including direct sunlight. The standard background is matte black.

Each segment contains a permanent magnet which interacts with an electromagnet. A 1 millisecond pulse activates a reversal of the magnetic field induced in the electromagnet which determines whether the segment is exposed (set) or retracted (reset).

### Benefits

**VISIBILITY:** The fluorescent, light-reflecting segments provide excellent visibility a wide range of ambient light conditions. Visibility increases with an increase in the ambient light level. Characters are visible at very wide angles up to 275m (900 feet).

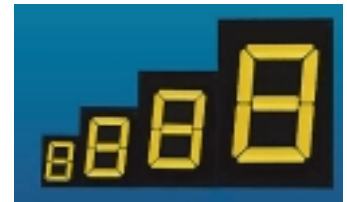
### Reliability

There are no lamps to burn out and no mechanical linkages wear out. Each segment rotates on a stainless steel pivot for maximum reliability. The modules are highly resistant to shock and vibration which makes them also suitable for portable scoreboards and traffic control displays in high vibration environments.

### Economy

Power is only required to change data displayed. The inherent magnetic memory in each segment maintains the display indefinitely without power being applied. Large displays can operate on only a few hundred watts of power.

An example of a Bus Destination sign utilizing seven segment modules to display the route number



# Specifications

## Environmental

- **Temperature:**
  - Operating; -40 to 75 °C
  - Storage; -45 to 85 °C
- **Relative Humidity:**
  - 5 to 95% non-condensing

## Coil

- **Resistance:** 8.0Ω ±10% @ 20°C
- **Temp. Coefficient:** 25°C/W (free air)
- **Temperature MAX:** 95°C
- **Current Pulse Amplitude MAX:** \*3.0A (set current limit of driver circuit)  
\*Implies minimum coil voltage of 24 Vdc.

## Current pulse data

Voltage across coil	Pulse width
60 Vdc	250 μsec
42 Vdc	400 μsec
32 Vdc	1 msec
*24 Vdc	2.8 msec

\*See note 1 below.

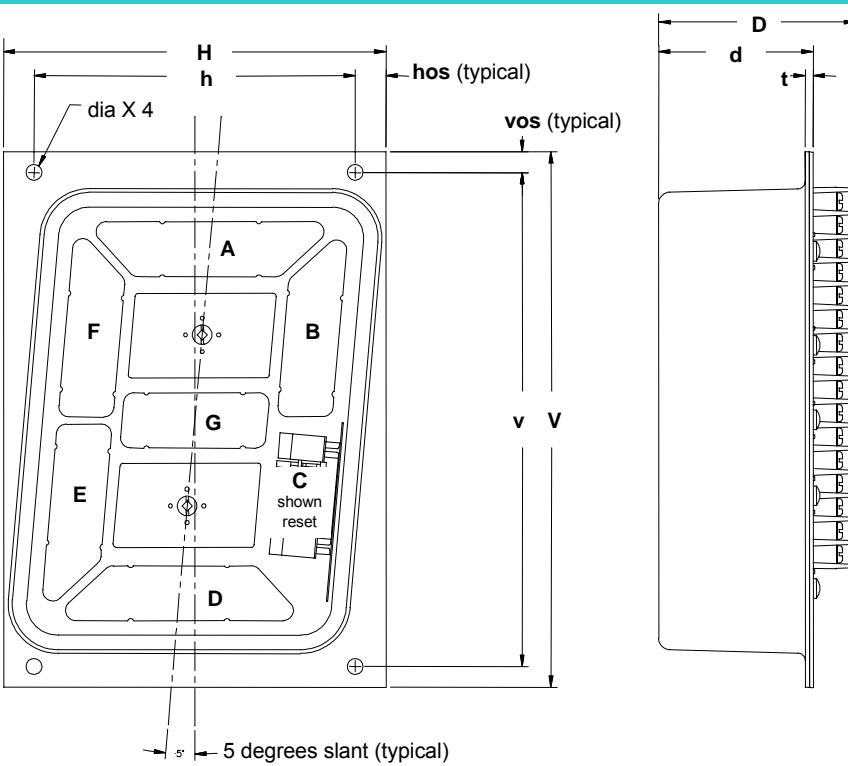
### Note 1:

At these coil drive parameters, the duty cycle for driving the same segment must be less than 5% (on/off time) therefore allow at least 53 msec before driving the same segment again. This will ensure that the segment coil will not accumulate heat.

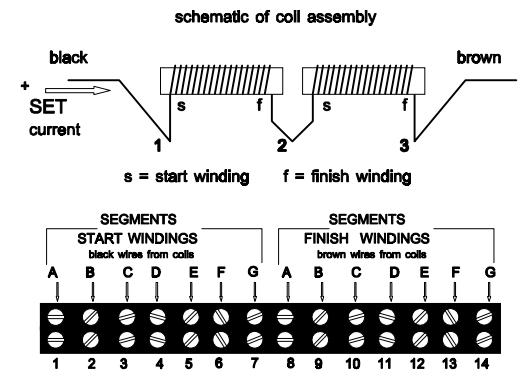
### Note 2:

Set current direction drives the segment to be shown, reset current direction is reversed to drive the segment to be hidden.

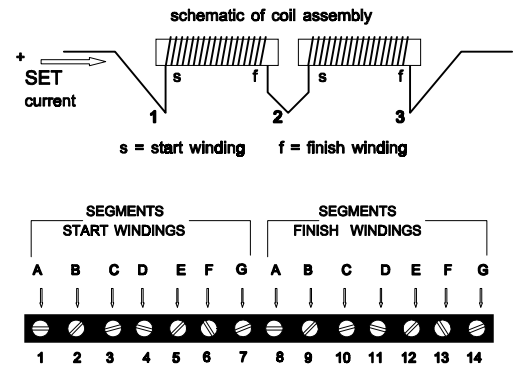
## Outline & Mounting



## Connections: 9", 12', 18"



## Connections: 6"



### Recommended termination wire lug sizes:

#### 9", 12", 18" modules:

The wire lug must fit a #5-40 UNC screw diameter which is 0.136 inches maximum.

#### 6" module:

The wire lug must fit a #6-32 UNC screw diameter which is 0.150 inches maximum.

Dimension	6" module	9" module	12" module	18" module
H note 4	6.100 (154.9)	9.0 (228.6)	12.5 (317.5)	18.0 (457.2)
V note 4	8.543 (217)	12.3 (312.4)	18.0 (457.2)	26.0 (660.4)
D	3.122 (79.3)	2.906 (73.8)	2.906 (73.8)	3.031 (77)
h	5.118 (131.8)	8.0 (203.2)	11.5 (292.1)	17.0 (431.8)
v	7.875 (200)	10.7 (271.8)	16.4 (416.6)	24.4 (619.8)
d	2.465 (62.6)	2.468 (62.7)	2.468 (62.7)	2.593 (65.9)
t	0.125 (3.2)	0.187 (4.7)	0.187 (4.7)	0.187 (4.7)
hos	0.491 (12.5)	0.50 (12.7)	0.50 (12.7)	0.50 (12.7)
vos	0.334 (8.5)	0.80 (20.3)	0.80 (20.3)	0.80 (20.3)
dia	4 mounting holes 0.250 (6.35 mm ) diameter, accepts #8 UNC screw (#4M)			

### Note 3:

The terminal block is shown above mounted vertically on the back of the 6 inch module, all other size modules have the terminal block mounted horizontally on the back of the module.

**Note 4:** Tolerance on this dimension is ± 0.062 inches (1.6 mm), all other dimensions tolerance is ± 0.031 inches (0.8 mm).

The above specifications are current at the time of publication although they are subject to change without notice. Please consult the factory for update information.