

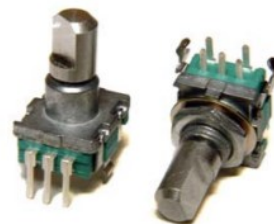
# Rotary Encoder

## Model EN11 Series



### Features:

- 11 mm rotary encoder
- 2 bits gray code
- Incremental/Contacting type
- Metal bushing/shaft
- Push-on switch option



### Model Styles Available

|                                               |          |
|-----------------------------------------------|----------|
| Top adjust, with switch, threaded bushing     | EN11-HSM |
| Top adjust, without switch, threaded bushing  | EN11-HNM |
| Top adjust, with switch, plain bushing        | EN11-HSB |
| Top adjust, without switch, plain bushing     | EN11-HNB |
| Side adjust, with switch, threaded bushing    | EN11-VSM |
| Side adjust, without switch, threaded bushing | EN11-VNM |
| Side adjust, with switch, plain bushing       | EN11-VSB |
| Side adjust, without switch, plain bushing    | EN11-VNB |

### Electrical

|                                   |                           |
|-----------------------------------|---------------------------|
| Pulses (per revolution)           | 15, 20                    |
| Encoder closed circuit resistance | 3 Ohms, max.              |
| Encoder contact rating            | 10mA/5Vdc                 |
| Operating current, maximum        | 10mA                      |
| Dielectric strength               | 300Vac/1mA, 1 minute      |
| Insulation resistance, minimum    | 100M ohms at 250Vdc/ 1 mA |
| Sliding Noise (at 60 RPM)         | 2.0ms max.                |
| Contact Bounce (at 15 RPM)        | 5.0ms max.                |
| Operating speed (RPM)             | 100 RPM max.              |
| Switch power rating               | 10mA/5Vdc                 |
| Switch contact resistance         | 100 miliohms              |
| Actual electrical travel, nominal | Continuous                |

#### Notes:

1. Specifications subject to change without notice

#### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

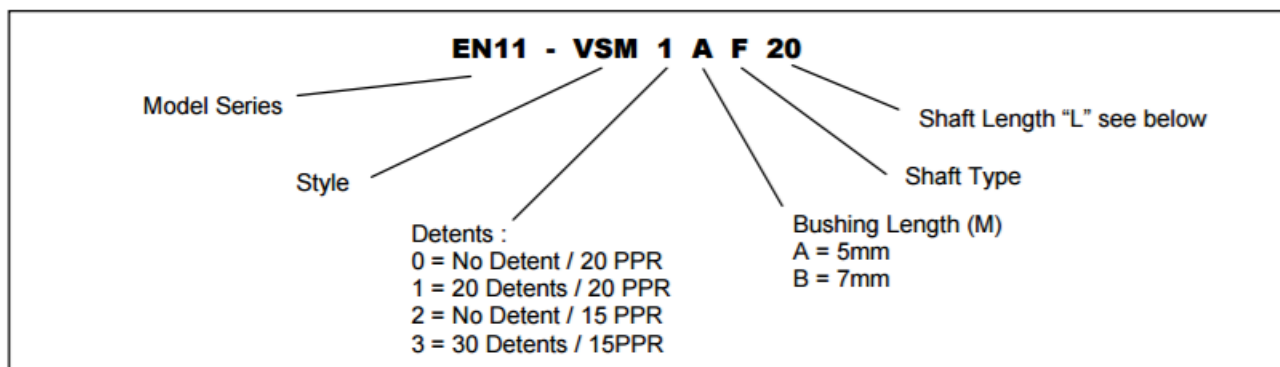
### Mechanical

|                                      |              |
|--------------------------------------|--------------|
| Total mechanical travel              | Continuous   |
| Detents (per revolution)             | 0, 20 and 30 |
| Rotational torque of detent, maximum | 2.5 oz-in    |
| Switch operating force               | 550 gf       |
| Switch travel                        | 0.5mm        |

### Environmental

|                             |                |
|-----------------------------|----------------|
| Operating temperature range | -10°C to +70°C |
| Rotational life             | 30,000 cycles  |

### Ordering Information



#### Notes:

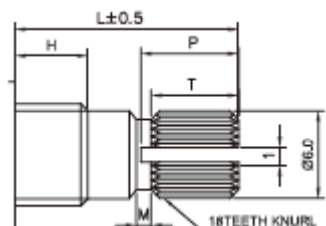
1. Contact our customer service for custom designs and features.

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### Shaft Types

#### Q Type



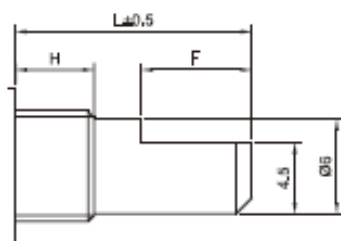
H = 5mm

|   |    |    |    |    |
|---|----|----|----|----|
| L | 15 | 20 | 25 | 30 |
| P | 7  | 7  | 11 | 14 |
| T | 6  | 6  | 10 | 12 |
| M | 2  | 2  | 2  | 4  |

H = 7mm

|   |    |    |    |    |
|---|----|----|----|----|
| L | 15 | 20 | 25 | 30 |
| P | 7  | 7  | 11 | 14 |
| T | 6  | 6  | 10 | 12 |
| M | 1  | 1  | 2  | 4  |

#### F Type



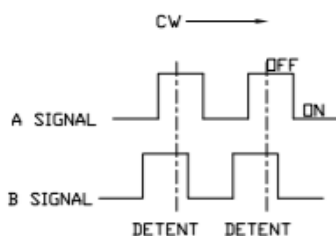
H = 5mm

|   |    |    |    |    |
|---|----|----|----|----|
| L | 15 | 20 | 25 | 30 |
| F | 7  | 10 | 12 | 12 |

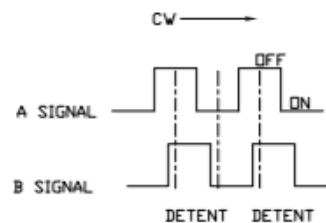
H = 7mm

|   |    |    |    |    |
|---|----|----|----|----|
| L | 15 | 20 | 25 | 30 |
| F | 5  | 10 | 12 | 12 |

### Circuit Diagram



For 20 PPR (B leads A)



For 15 PPR (A leads B)

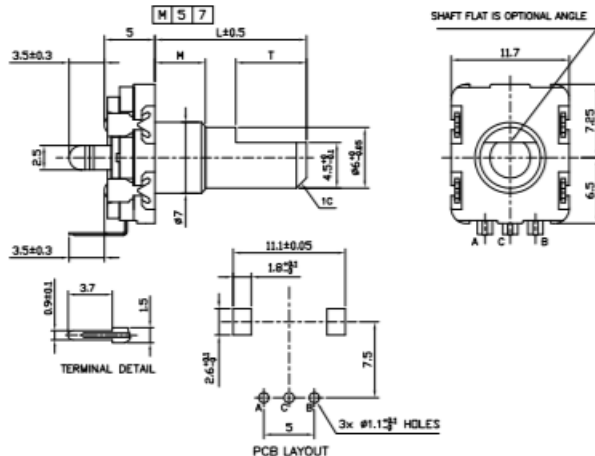
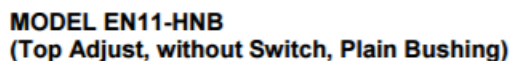
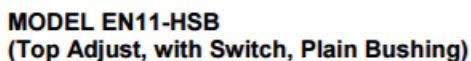
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**MODEL EN11-HSM**  
**(Top Adjust, with Switch, Threaded Bushing)**

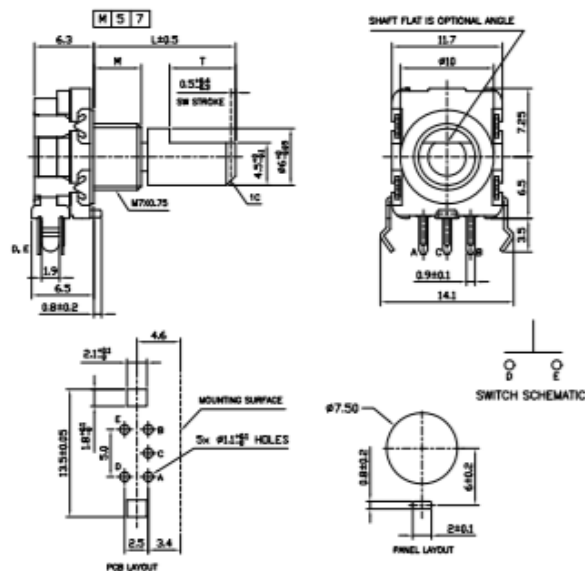
Downloaded from [Arrow.com](http://Arrow.com).

## Model EN11 Series

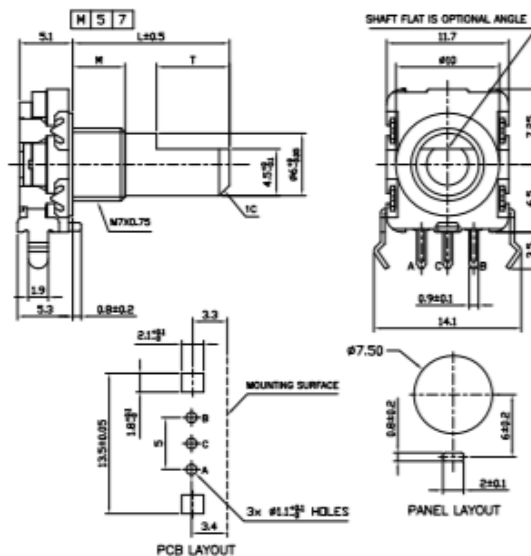


## Outline Drawings

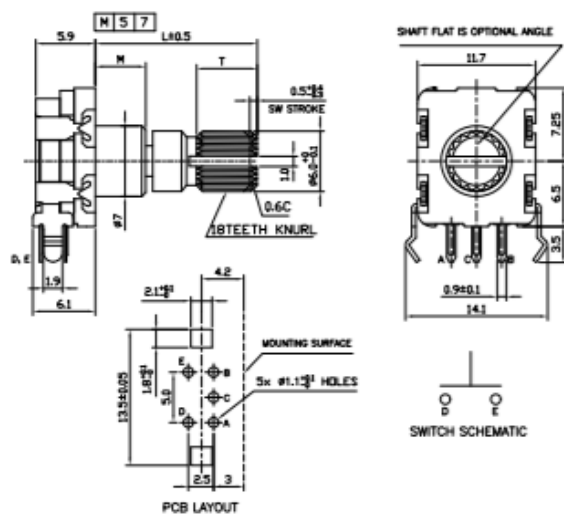
**MODEL EN11-VSM**  
(Side Adjust, with Switch, Threaded Bushing)



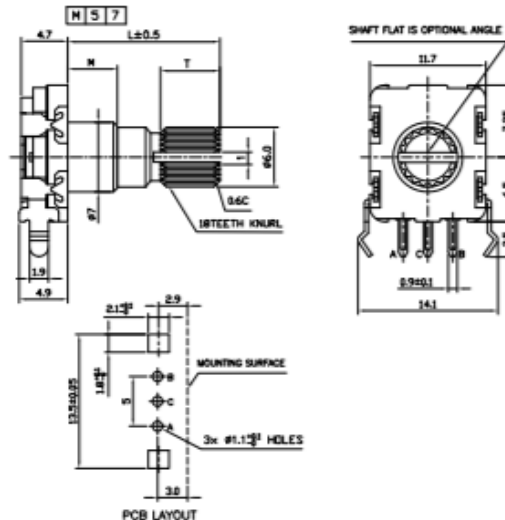
**MODEL EN11-VNM**  
(Side Adjust, without Switch, Threaded Bushing)



**MODEL EN11-VSB**  
(Side Adjust, with Switch, Plain Bushing)



**MODEL EN11-VNB**  
(Side Adjust, without Switch, Plain Bushing)



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Issue E 11/2023 Page 5