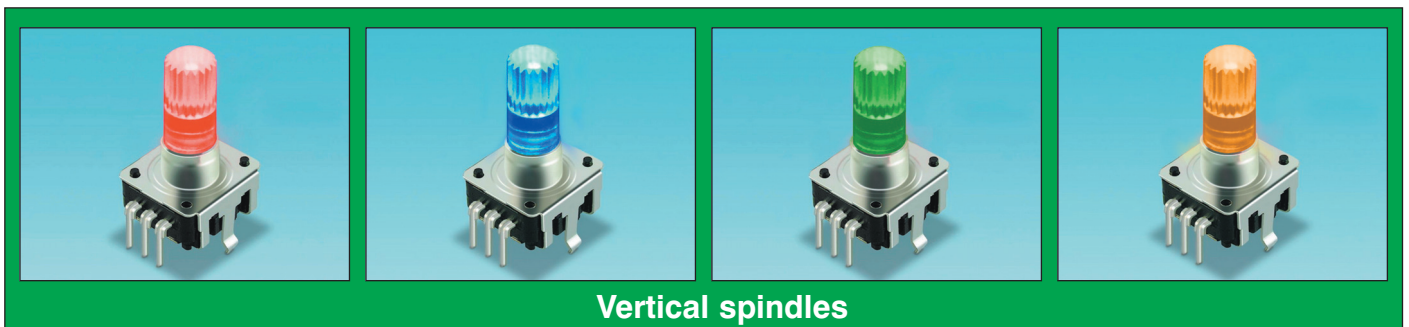




E12 Series

12mm Rotary Encoders with LED Illuminated Spindles and optional momentary action switches



Introduction

E12 rotary encoders have transparent spindles for illumination with integral LEDs. This provides users with a visual indication of the system state (e.g. whether the equipment has power and if it's in standby or on mode).

The encoders are available with optional momentary action switches and a choice of PCB mounting with the spindle horizontal or vertical. For rotational 'feel' purposes, spindles can be supplied with or without detents.

Both the encoders and switches are RoHS compliant.

Typical Applications

Volume and tone controls for car radios, hi-fi systems and audio mixing desks. Washing machine controls, oven timer and temperature controls, speed controllers for fans, food mixers and disabled electric vehicles. Miscellaneous equipment where a rotary control and indicator light are required.

Encoder Type

Incremental, digital, 24 pulse, rotary encoders with conductive tracks and LED illuminated spindles. Single colour LED without switch, two LEDs when switch is fitted.

Switch Type

Momentary, single pole, push to make.

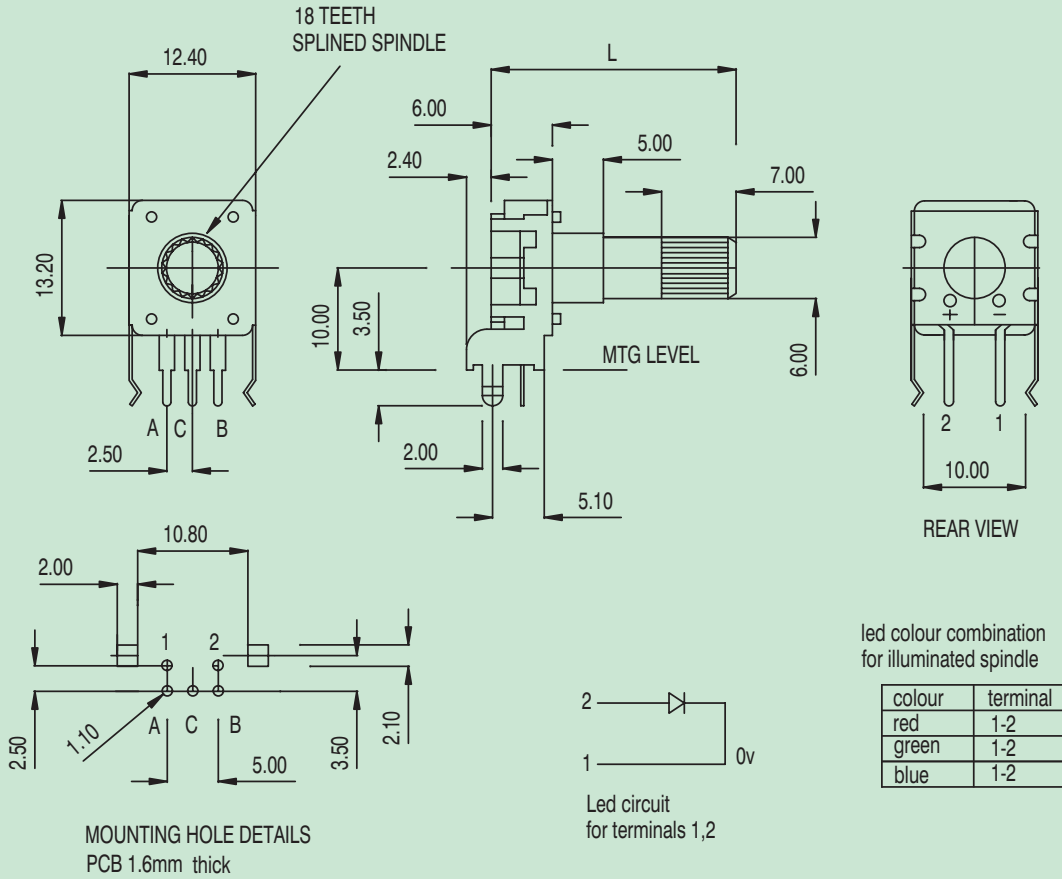
Encoder Specification

Resolution	24 pulses/360° for each phase
Encoder Rating	DC 5V 0.5mA
Phase A and B	Common Terminal C
Rotation	360° endless
Insulation Resistance	100 Megohms
Life	30,000 ops min at rated load
Operating Temperature	- 25°C to +70°C

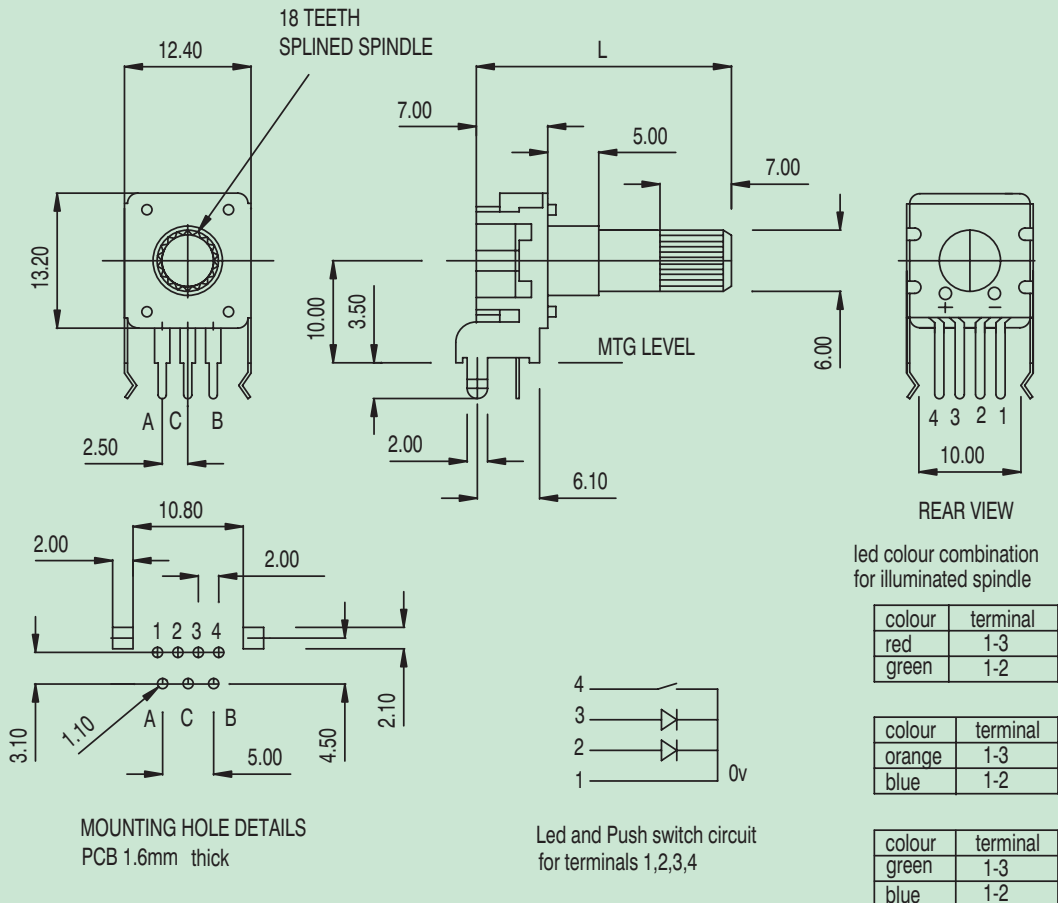
Switch Specification

Contact Rating	DC 5V 10mA
Actuation	Momentary, push to make
Type	SP (Single pole)
Switch Travel	0.50 mm
Life	20,000 ops min at rated load
Insulation Resistance	100 Megohms
Contact Resistance	200 milliohms
Plunger	Insulated from switch
Operating Temperature	- 25°C to +70°C

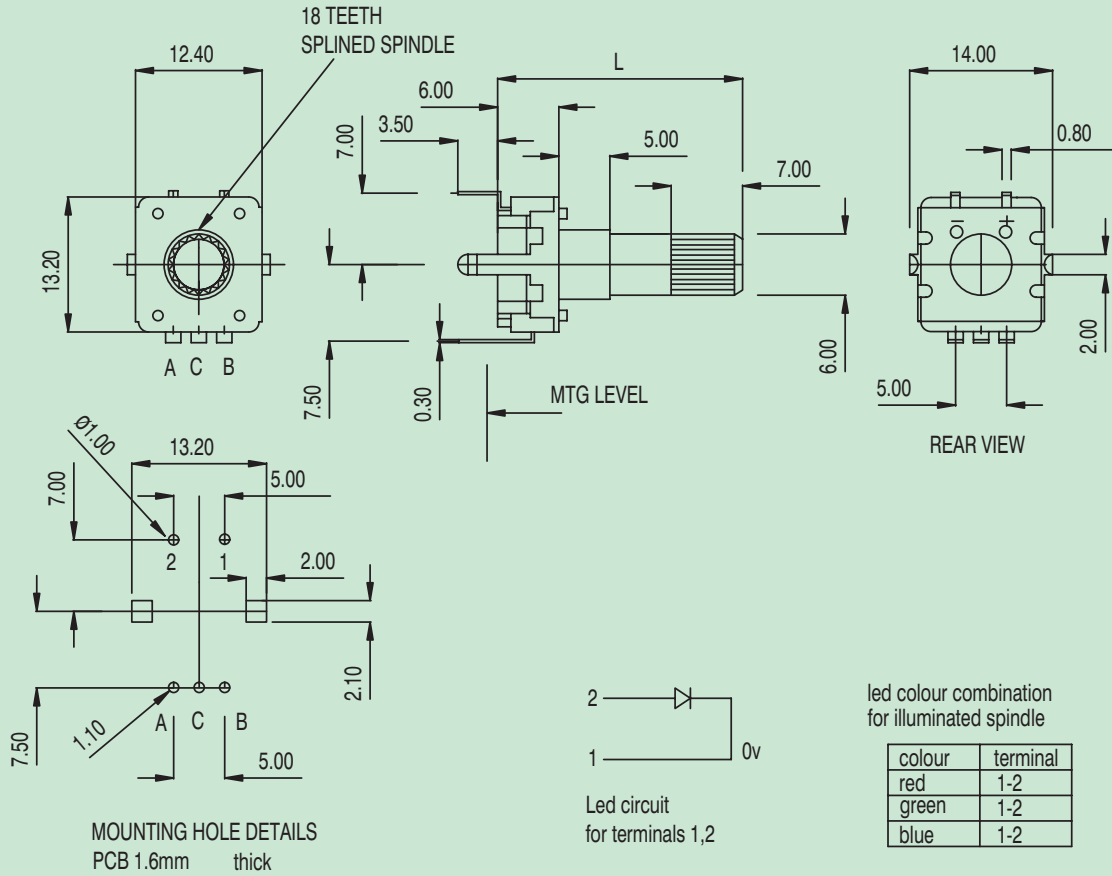
E12 horizontal spindle, without switch



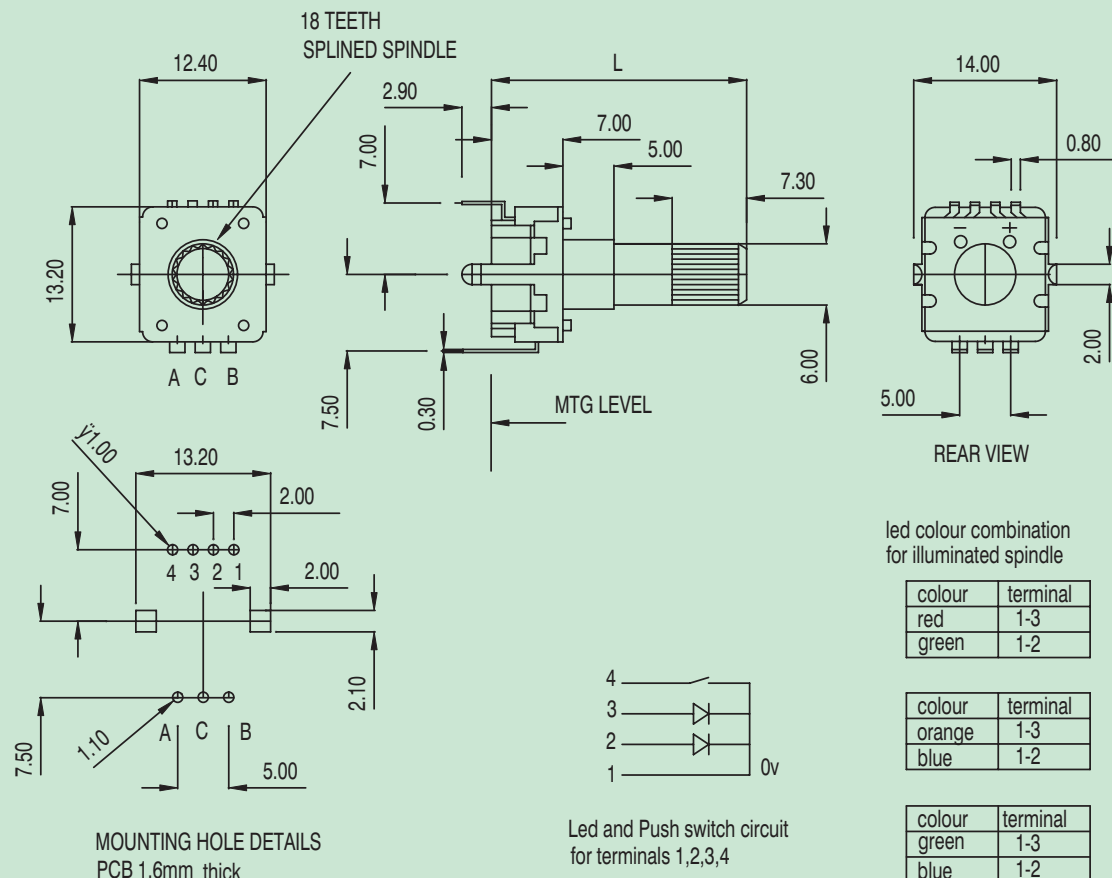
E12 horizontal spindle, with switch



E12 vertical spindle, without switch



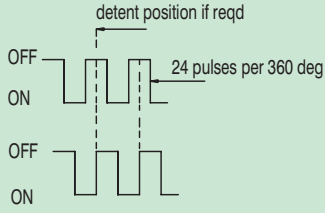
E12 vertical spindle, with switch



Encoder output clockwise rotation

Encoder output
Shaft rotation CW
terminals A-C
phase A

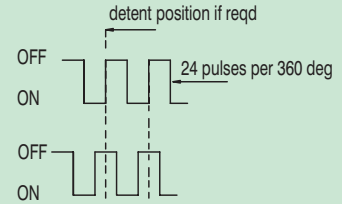
terminals B-C
phase B



Encoder output counter clockwise rotation

Encoder output
Shaft rotation CCW
terminals A-C
phase A

terminals B-C
phase B



LED Characteristics

Reverse current: $[IR] = 10\mu A$ $[VR] = 5V$

Reverse voltage: 5V

Operating temperature: $-40^{\circ}C$ to $+85^{\circ}C$

Emitted colour	Power dissipation	DC forward current	VF at IF=20mA	
			Max	Typical
Blue	100mW	20mA	3.5V	2.5V
Red	63mW	25mA	2.5V	2.0V
Green	63mW	20mA	2.5V	2.0V
Orange	75mW	30mA	2.5V	2.1V

Control Knobs



Diameter	Height	Part No.
10.2	14.2	P1014A

Transparent body, white cap with indicator



Diameter	Height	Part No.
10.2	14.2	P1014

Transparent body, white cap without indicator



Diameter	Height	Part No.
15	12.5	P1513

Transparent body



Diameter	Height	Part No.
18.5	18.7	P1919

Transparent body



Diameter	Height	Part No.
15.6	17.1	P1617

Black body, transparent top

Order codes

E12 * * * * ** **

Rotary encoder
12 mm (incremental)

Mounting orientation

V = vertical spindle
H = horizontal spindle

Detents

N = none
24 = 24 detents

Spindle type

S = splined

Spindle, length 'L' without switch

24 = 24 mm SPLINED spindle

Spindle, length 'L' with switch

25 = 25 mm SPLINED spindle

LED colour without switch

R = red
G = green
B = blue

LED colours with switch

BG = blue and green
BO = blue and orange
GR = green and red

Optional switch

/S = with switch
blank = without switch



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