

Type DPL12 Series

Key Features

- 12mm rotary encoder
- Incremental type
- Push on switch option
- Various shaft lengths
- LED color options
- Detent options

Applications

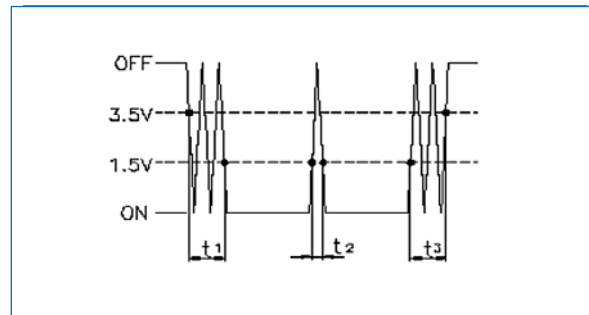
- Power supplies
- Inverters
- Servo systems
- Electrical systems in difficult environments



12mm rotary incremental encoder with LED for use in electronic equipment.
Can be supplied with or without switch with customization to standard options.

Characteristics - Electrical

Pulses:	24
Contact Rating:	0.5mA 5V DC
Dielectric Strength:	300VAC / 1mA, 1 minute
Insulation Resistance (min):	100MΩ at 250VAC
Operating Speed (RPM):	60 RPM
Switch Power Rating (where fitted):	5V DC 10mA
Switch Contact Resistance:	100mΩ max
Electrical Travel:	Continuous
Rotational Noise:	t ₂ = 2.0ms max (see below)
Chattering:	t ₁ & t ₃ = 3.0ms max (see below)



	Code Off area V = 3.5V or more. Code on area V=1.5V or less
LED	Switch - Dual color - see below for characteristics No Switch - Single color - see below for characteristics
Color options	No Switch - White, Red, Green, Blue Switch - 1: Blue/Green, 2: Blue/Orange, 3: Green/Red

Characteristics - Mechanical

Total Mechanical Travel:	Continuous
Detents:	0, 24
Switch Operating Force:	400+/- 200gf
Switch Travel:	0.5mm
Shaft Type:	F - Flatted, K - Knurled
Shaft Length (from Mounting Surface):	See chart below

Characteristics - Environmental

Operating Temperature:	-40 to +85°C
Rotational Life:	30,000 cycles

Soldering Condition

Manual Soldering - Bit temperature 300°C or less Application time 3 seconds max.
Dip Soldering - Preheating - Surface temperature of board 100°C or less - preheating time < 1 minute
Soldering - Solder temperature 260 +/-5°C Immersion time 3 +/-1 second

Output Signal Format

Shaft Rotational Direction	Signal	Format
Clockwise	A (Terminal A-C)	OFF ON
	B (Terminal B-C)	OFF ON
Anticlockwise	A (Terminal A-C)	OFF ON
	B (Terminal B-C)	OFF ON

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LED Characteristics - Without Switch

Reverse Current:	[IR] = 10uA	
Reverse Voltage:	5V	
Operating Temperature:	-40 to +85°C	

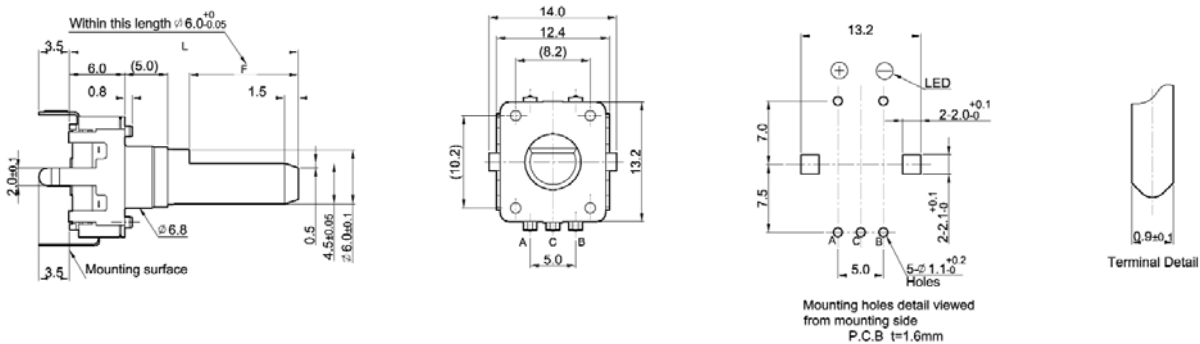
Emitted Color	Power Dissipation	DC Forward Current	Forward Voltage	
			Typical	Max.
White	100mW	20mA	3.3V	4.0V
Blue	100mW	20mA	3.2V	4.0V
Red	58mW	25mA	1.8V	2.3V
Green	48mW	20mA	2.0V	2.4V

LED Characteristics - With Switch

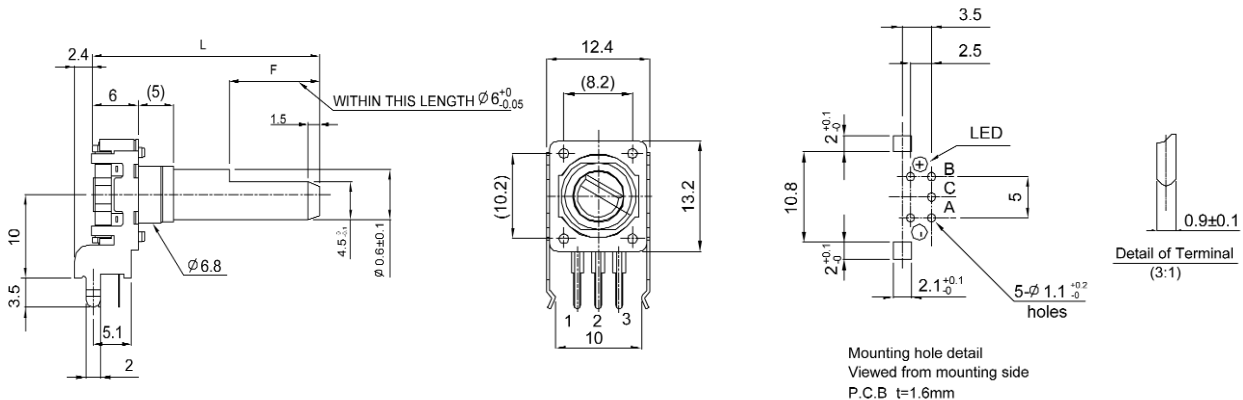
Reverse Current:	[IR] = 10uA	
Reverse Voltage:	5V	
Operating Temperature:	-40 to +85°C	

Emitted Color	Power Dissipation	DC Forward Current	Peak Forward Current	Forward Voltage	
				Typical	Max.
Red	170mW	30mA	185mA	1.95V	2.5V
Orange	75mW	30mA	195mA	2.1V	2.5V
Blue	105mW	30mA	150mA	3.3V	4.0V
Green	105mW	25mA	130mA	3.1V	3.8V

Dimensions - DPL12V

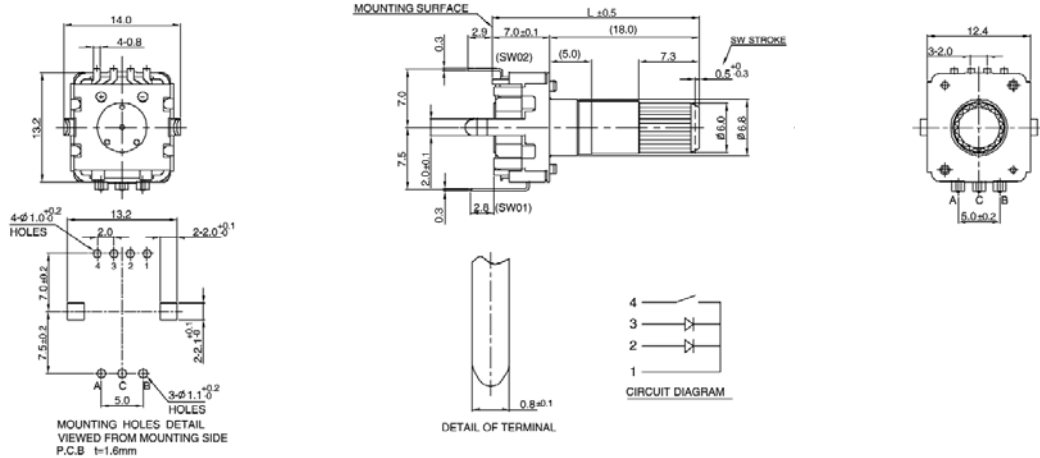


Dimensions - DPL12H

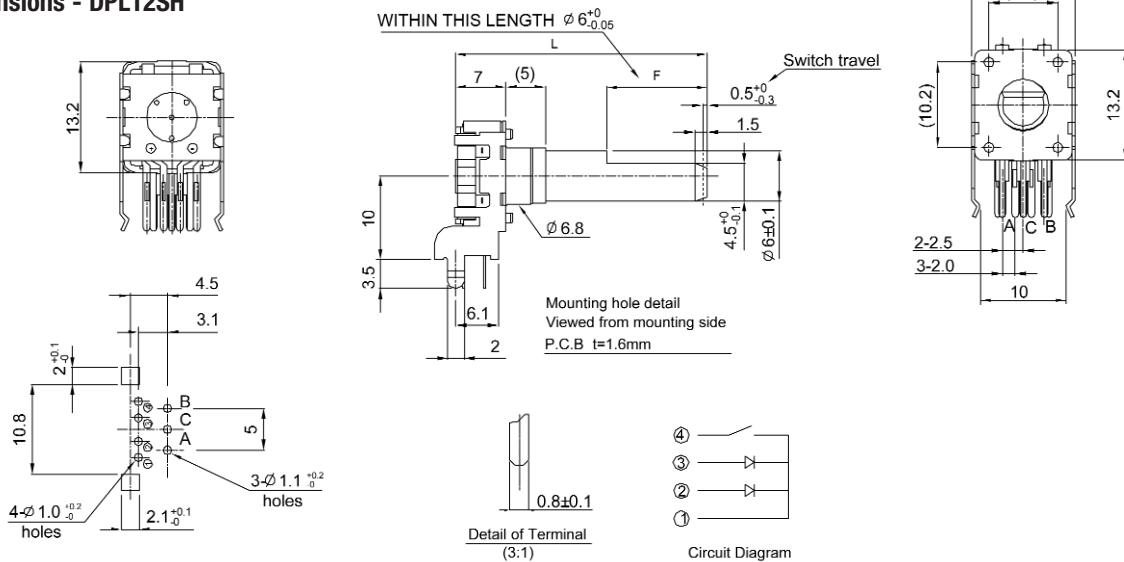


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Dimensions - DPL12SV



Dimensions - DPL12SH



Shaft Length - Without Switch

Type	Dim	Options (mm)
K	L (from mounting surface)	24 only
F	L (from mounting surface)	17.5
		20
		25
	F	5
		7
		12

Shaft Length - With Switch

Type	Dim	Options (mm)
K	L (from mounting surface)	25 only
F	L (from mounting surface)	18.5
		21
		26
	F	5
		7
		12

LED Color Codes

Switch Option	Code	Description
	1	Blue / Green
Switch (Dual Color)	2	Blue / Orange
	3	Green / Red
	W	White
No Switch (Single Color)	R	Red
	G	Green
	B	Blue

How to Order

DPL12	V	N	24	A	20	F	R
Common Part	Orientation	Detent	Pulses	Bush Details	Shaft Length	Shaft Style	LED Color
DPL12 - no switch DPL12S - with switch	V - Vertical H - Horizontal	N - None 24 - 24 clicks	24 - 24 pulses	A - 5mm	See relevant table	F - Flatted K - Knurled	See relevant table

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