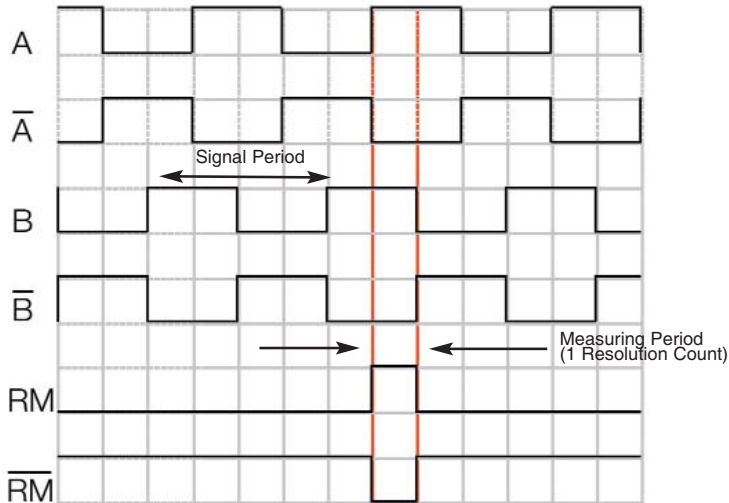


Differential Quadrature

The SHG-PV and SHG-PC Linear Encoders provide a differential quadrature output. SHG-PV provides both 28V/V (5-28Vin. Vin=Vout) and 28V/5 (5-28Vin, 5Vout) line driver outputs. SHG-PC provides 28V/OC (5-28Vin, Open Collector Out) open collector output.

The periodic Reference Mark (RM) is synchronised with the A & B signals as shown in the diagram.

The distance between two successive edges of the combined pulse trains A and B is one measuring step (resolution).



Encoder Connections

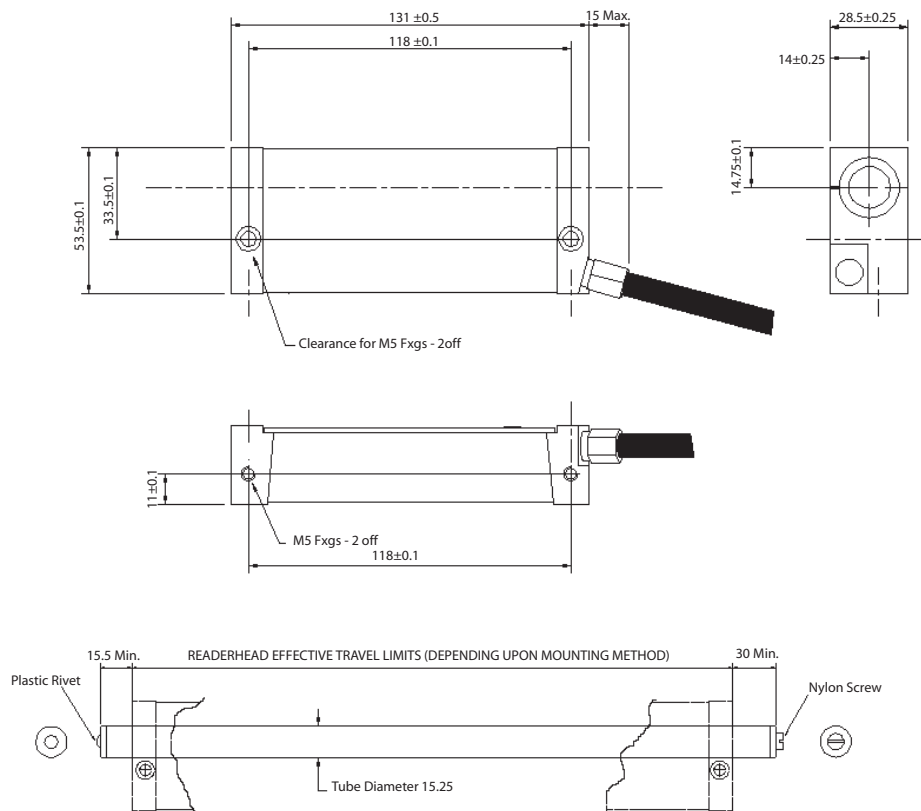
15W 'D'	Colour	Function
1	LIGHT GREEN	A+ (Vin or OC)
2	ORANGE	PC
3	PINK & WHITE	Z- (Vin or OC)
4	GREY	Z- (5V)
5	RED	B- (5V)
6	YELLOW	A- (5V)
7	PINK	Z+ (Vin or OC)
8	BLACK	+Vin
9	LIGHT GREEN & WHITE	A- (Vin or OC)
10	BROWN	B+ (Vin or OC)
11	BROWN & WHITE	B- (Vin or OC)
12	VIOLET	Z+ (5V)
13	BLUE	B+ (5V)
14	DARK GREEN	A+ (5V)
15	WHITE	0V
SHELL	SCREEN	GROUND

SHG-PV/PC LINEAR ENCODER

DATASHEET

NEWALL

- High tolerance to shock and vibration
- Comparable range of accuracy and resolutions
- High level of repeatability
- Thermal co-efficient of expansion is similar to steel
- High traverse rates
- Easy installation
- Travel lengths less than 11 metres, single scale, modular available to 30 metres



Type	Inductive	Maximum scale travel	11,000mm (433 in.)*
Accuracy grade (µm/m)	+/-10 (+/-0.0004 in)	Maximum single end mount measuring length	350mm (14 in)
Resolutions (µm)	1 (0.00005 in)	Maximum length between supports	1500mm (59 in)**
Reference type	Periodic	Scale over-travel requirements	254mm (10 in)
Reference location	Every 12.7mm (0.5in)	Moving force	20N
Maximum traverse rate	2MHz (2m/s at 1µm resolution)	Cable	15 core screened cable with PUR (polyurethane) cover with no armour
Maximum Acc. / Dec.	100g / 980m/s (head moving)	Cable length	0.5m (20 in)
Power supply	5-28 VDC ±5 % < 120mA @ 5V	Minimum bend radius with PUR	25mm (1in)
Shock (11ms)	100g / 980m/s ² (IEC 69-2-6)	Maximum cable length	22m (866 in)
Vibration (55-2000Hz)	30g / 294m/s ² (IEC68-2-27)	Connector	D type 15 pin
Ingress protection level	IP67 (NEMA 6)	EMC compliance	BS EN 50081-2 & BS EN 50082-2
Operating temperature range	0 to 55°C (32 to 131°F)	OPTIONS	
Storage temperature range	-20 to 70°C (-4 to 158°F)	Resolutions (µm)	0.5, 2, 5, 10
Magnetic field susceptibility	100mT (1000 Gauss)	Resolutions (in)	(0.0001 in, 0.0002 in, 0.0005 in, 0.00002 in)
Radiated magnetic field	Not measurable		
Overall cross-section	53.5 x 28.5mm (2x1in)		
Scale material	Stainless Steel		
Co-efficient of expansion	12ppm/°C		
Scale OD	15.25mm (0.6 in)		