

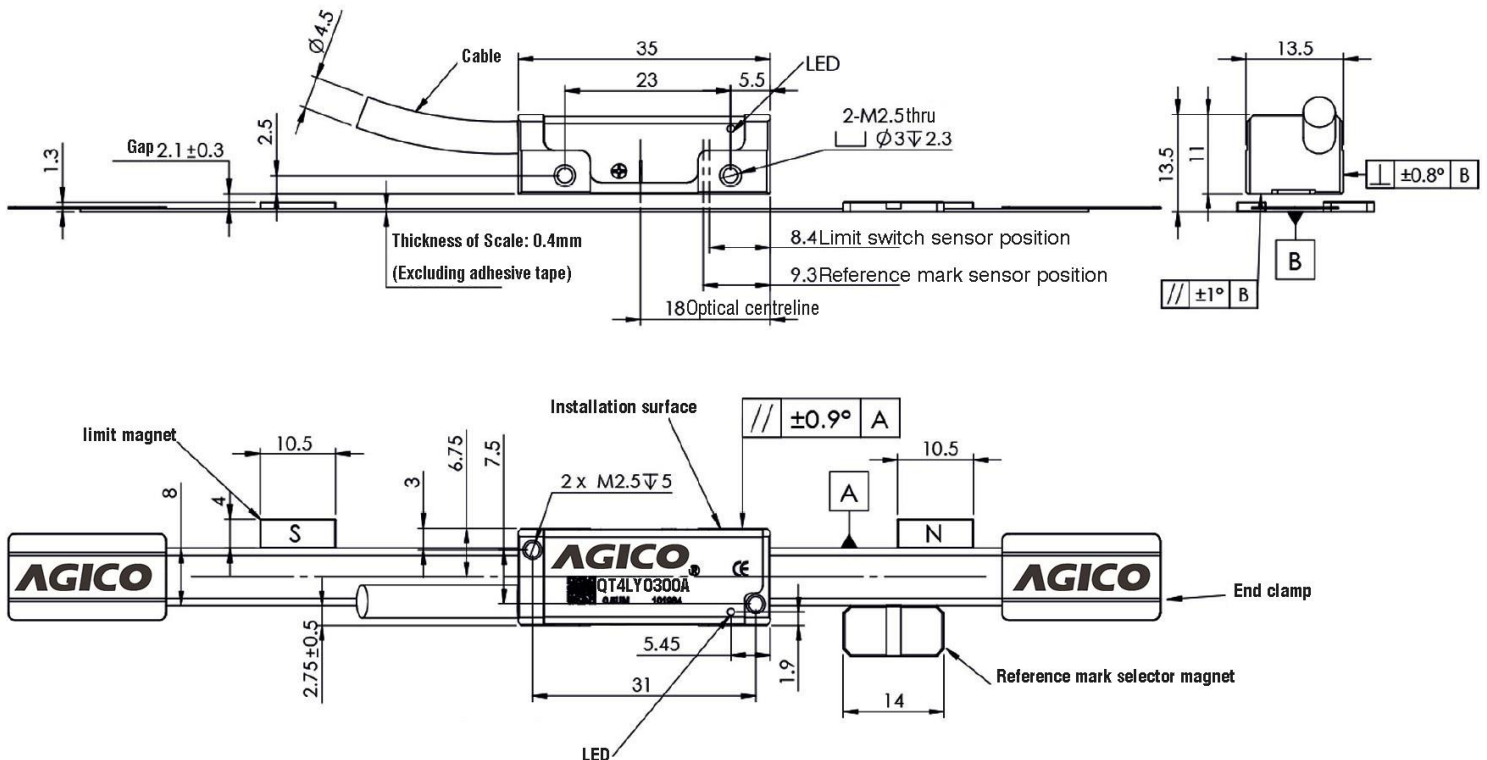
- Non- contact optical encoder
- Industry standard digital and analogue output options
- Customized resolution from 10nm to 5um
- Reference mark
- High speed operation
- Integral set-up LED



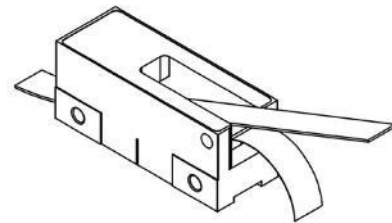
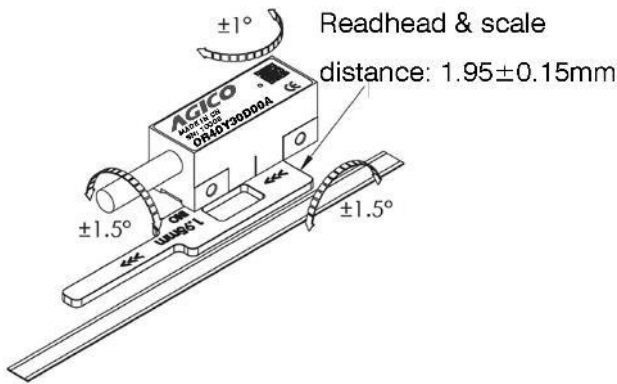
**System data:**

Feature	Technical Data	Additional information
Output Signals	Incremental	
Scale	OS41	
Resolution	Max.10nm	
System accuracy	$\pm (0.001+0.006 \times L)$ mm	L in m
Repeat accuracy	$\pm 0.0001$ mm	
Sensor/band reading distance	$2.1 \pm 0.3$ mm	
Power supply	5VDC $\pm 5\%$	
No-load Current	<70mA	
Operating Current	<190mA	
Acceleration (system)	400 mm/s <sup>2</sup>	
Typical sub-divisional error (SDE)	$\pm 50$ nm	
Vibration	100 m/s <sup>2</sup> max @55Hz to 2000Hz	Operation
Output Signals	Digital / Analogue outputs	Digital outputs: RS422, Push-pull
LED Logic	Blue: Signal strength >80% Green: Signal strength >60% Red: Signal error	Read head pass reference mark: a)LED flash once(0.3 seconds): Operative State b)LED flash twice(0.3 seconds): Fault State. The reference mark magnet needs to be adjusted, or the reading head change the position slightly.
Operating temperature	-10~+70°C	
Storage temperature	-20~+80°C	
Humidity	RH<90% (non-condensing)	
Sealing	IP40	
Housing	Alloy	
Mass	Readhead 10g, Cable 45g/m	

**Dimension (Unit: mm)**

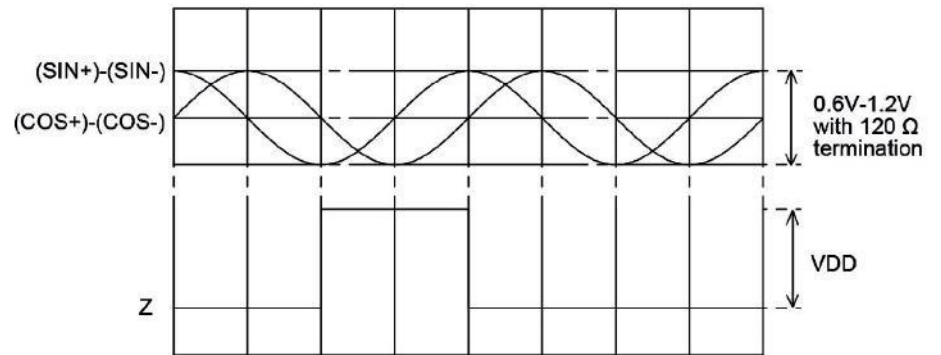
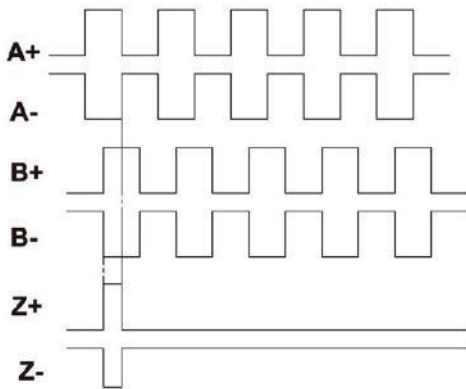


**Readhead mounting and alignment**

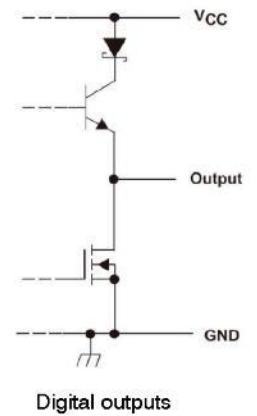
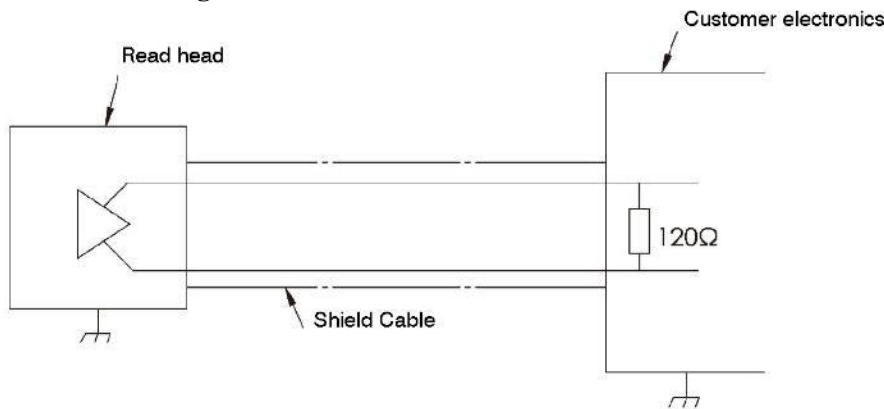


Scale applicator

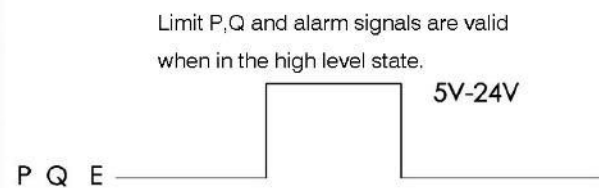
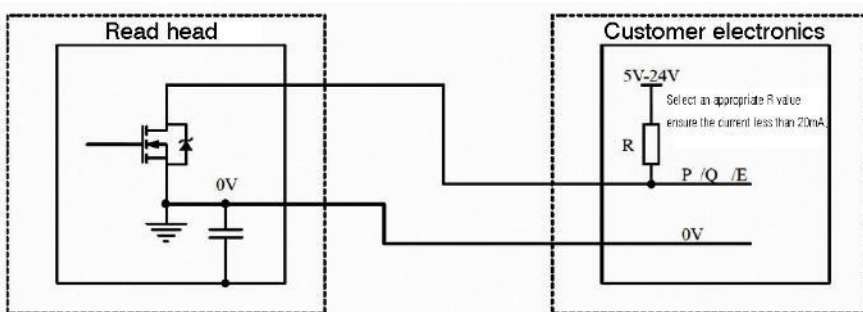
**Digital / Analogue output signals**



**Recommended signal termination**



**Limit / Alarm output signals**

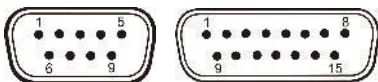


**Linear scale**

Feature	Technical Data	Additional information
Linear Scales	OS41	
Pitch	40mm	
Form (height × width)	0.3 x 8mm	
Accuracy	±3 um/m	
Linearity accuracy	±1.5 um/m	
Maximum length	50m	
Coefficient of thermal expansion	10.1±0.2 um/m/°C	(at 20 °C)
Mass	18g/m	

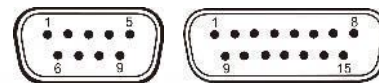
**Analogue outputs**

Function	Signal	Colour	9-way D-type	15-way D-type
Power	5V	Red	5	4
	0V	Black	1	12
Incremental	SIN+	White	2	9
	SIN-	Grey	6	1
	COS+	Blue	4	10
	COS-	Purple	8	2
Reference mark	Index+	Brown	3	3
	Index-	Orange	7	11
Shield	In	Silver	9	15
	Out	Screen	Case	Case



**Digital output**

Function	Signal	Colour	9-way D-type	15-way D-type
Power	VCC	Red	5	7
	GND	Black	1	2
Incremental	A+	White	2	14
	A-	Grey	6	6
	B+	Blue	4	13
	B-	Purple	8	5
Reference mark	Z+	Brown	3	12
	Z-	Orange	7	4
Limits	P	Yellow	-	11
	Q	Green	-	10
Alarm	E	Pale Green	-	3
Shield		Screen	Case	Case



**Readhead part numbers**

**QT4LX30D00A**

**Series** \_\_\_\_\_

**Pitch:** 40um

**Resolution:**

- O : 10nm (Max Speed:0.3m/s)
- I : 20nm (Max Speed:0.6m/s)
- K : 40nm (Max Speed:1.1m/s)
- H : 50nm (Max Speed:1.5m/s)
- Y : 0.1um (Max Speed:3m/s)
- W : 0.2um (Max Speed:6m/s)
- Z : 0.5um (Max Speed:15m/s)
- X : 1um (Max Speed:18m/s)
- D : 5um (Max Speed:18m/s)
- A : 1VPP **Analogue outputs**

**L:** Limit magnet A:Customided

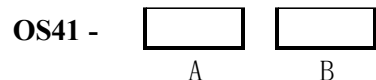
D00: Open cable ends  
D09: 9-way D-type  
D15: 15-way D-type

**Cable length:**

- 03: 0.3m    05: 0.5m
- 10: 1.0m    15: 1.5m
- 30: 3.0m    50: 5.0m
- 100: 10m
- Customized lengths

**Linear scale part numbers \_ OS41 series**

Feature	Order data	Specifications	Additional information
Scale length (mm)	300	0.3m	
	900	0.9m	
	3000	3m	
	...		Max. 40m
Adhesive	-	With adhesive	
	E	Without adhesive	



**Optional parts**

Tools	Part NO
Reference mark magnet	IND140716
P,Q limit magnet	LIM1050413
Scale applicator	OS40-MT06
End clamp	604TP