

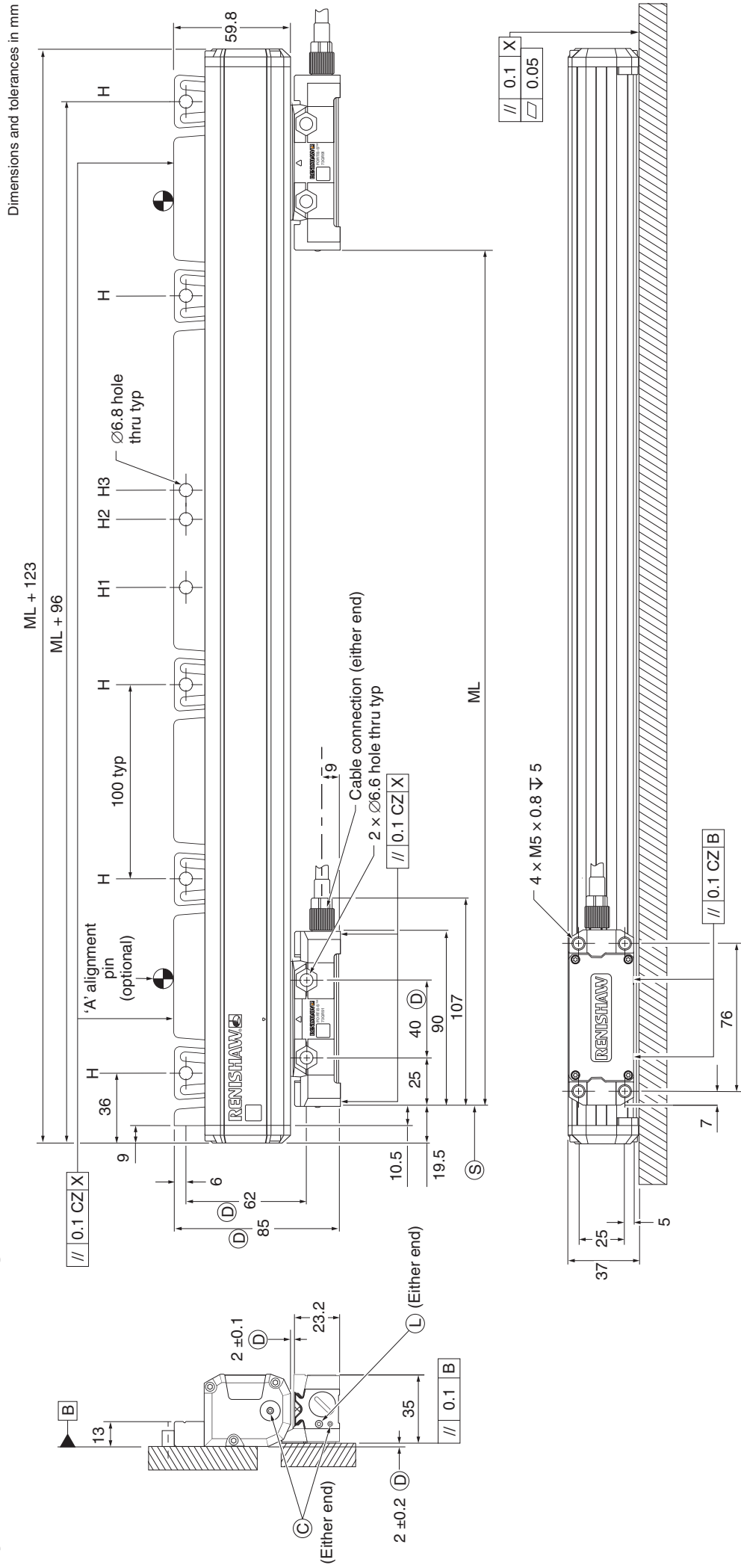
FORTiS-S™ enclosed encoder system


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Specification

Measuring standard	Renishaw stainless-steel scale with single track absolute encoding
Coefficient of thermal expansion (at 20 °C)	10.1 ±0.2 µm/m/°C
Thermal datum	At centre position (encoder position of 0.5 × measuring length)
Measuring lengths available (mm)	140, 240, 340, 440, 540, 640, 740, 840, 940, 1040, 1140, 1240, 1340, 1440, 1540, 1640, 1740, 1840, 2040, 2240, 2440, 2640, 2840, 3040
Accuracy grades	High grade: ±3 µm Standard grade: ±5 µm
Resolution	1 nm, 1.25 nm (FANUC only), 10 nm, 12.5 nm (FANUC only), 50 nm
Absolute position protocols	BiSS C, Siemens DRIVE-CLiQ (with external interface), FANUC ($\alpha/\alpha i$), Panasonic, Mitsubishi
Encoder electrical connection	Cable connector M12 custom (customer configurable exit direction)
Controller electrical connection	8-way M12, FANUC 20-way, 10-way Mitsubishi, 17-way M23, 9-way D-Type, 14-way LEMO, flying lead
Cable length	Up to 100 m (with extension cable)
Power supply	5 V ±10% 1.25 W maximum (250 mA @ 5 V)
Set-up LED	Signal strength indicator LED
Maximum speed	4 m/s
Acceleration (readhead relative to scale)	< 200 m/s ² in measuring direction
Moving force (maximum force required to move the readhead through the seals)	< 5 N
Vibration (55 Hz to 2000 Hz)	Housing: < 300 m/s ² to IEC 60068-2-6 Readhead: < 300 m/s ² to IEC 60068-2-6
Shock 11 ms half-sine	< 300 m/s ² IEC 60068-2-27
Operating temperature	0 °C to 50 °C
Environment protection	IP53 when installed correctly, IP64 with air purge
Air purge requirements	Air supply pressure = 1 bar at encoder At correct supply pressure the supplied air connection fitting restricts the air flow rate to 2 l/min
Weight	0.27 kg + 2.0 kg/m

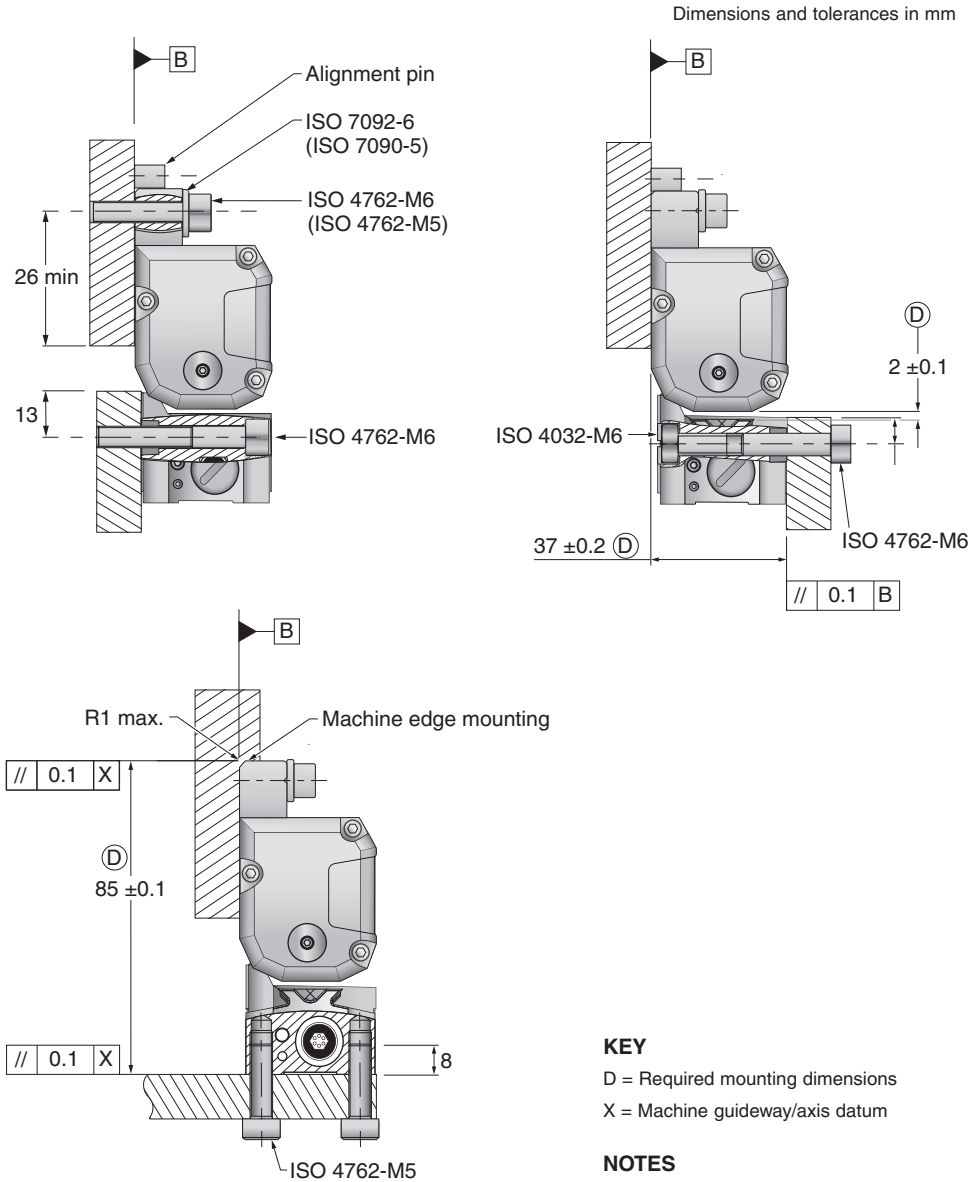
System installation drawings



KEY

- A = Recommended extrusion alignment pin locations (if required)
Adjacent to first and last flexure holes plus every 300–500 mm
- C = Compressed air inlet fitting
- D = Required mounting dimensions
- H1 = Flexure mounting holes
- H2 and H3 = Alternative mounting holes (non-preferred)
- L = LED set-up illumination
- H = Fixed mounting hole (preferred)
- H1 = Flexure mounting holes
- H2 and H3 = Alternative mounting holes (non-preferred)
- L = LED set-up illumination
- ML = Measuring length
- S = Start of measuring length
- X = Machine guideway/axis datum

Mounting orientations



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