



- Ideal for permanent installation
- Robust elongation sensor
- High measurement resolution
- Integrated temperature sensor + self-diagnostic functionality
- Quick installation and commissioning

The EnDat 2.2 logo, featuring the text 'EnDat 2.2' in a bold, sans-serif font with a stylized arrow pointing to the right.



Sensor configuration

Type/Model	ESR 125 (for adhesive installation)
Measuring arm, material	GFRP (thermal temperature coefficient: approx. 8×10^{-6} K)
Measuring arm, length	0.2 m
Accessories	Safety caps included
Weight	0.65 kg

Elongation measurement

Measuring step	0.025 $\mu\epsilon$	
Measuring range	$\pm 5.000 \mu\epsilon$	
Permissible mechanical working range	$\pm 17.500 \mu\epsilon$	
	<i>Standard deviation</i>	<i>With correction in subsequent electronic</i>
Accuracy (from measurement value)	< $\pm 0.2\%$	< $\pm 0.02\%$
Linearity (from measurement value)	< $\pm 0.2\%$	< $\pm 0.02\%$
Hysteresis	$\pm 2 \mu\epsilon$	$\pm 2 \mu\epsilon$
Repeatability	< $1 \mu\epsilon$	< $1 \mu\epsilon$

Temperature measurement

Measuring step	0.2 K
Measuring range	-40°C...+100°C
Offset to ambient temperature	+ 10 K
Accuracy	± 2 K

Electrical data

Power supply	3.6 VDC to 14 VDC
Polarity protected	No
Current consumption	85 mA (at 5 VDC)
Output signal	EnDat 2.2
Cable length. Max.	100m (only with approved cable)
Clock frequency	< 8 MHz
Sampling frequency	< 30 kHz
Connection	M12, 8pin, flange socket
Connection direction	Axial

Mechanical data

Operating temperature	-40°C...+100°C
Storage temperature	-20°C...+70°C
Ingress protection class [IEC 60529]	IP 66
Vibration [IEC 60068-2-6]	≤ 200 m/s ²
Shock [IEC 60068-2-27] - installed	≤ 300 m/s ²
Shock [IEC 60068-2-27] - transport	≤ 1000 m/s ²
Cover material	Aluminum

Pin configuration

Function	0V Sense	+E V Sense	Data	Data inverted	0 Volt	Clock inverted	Clock	+E Volt
Pin	1	2	3	4	5	6	7	8
Cable	White	Blue	Gray	Pink	White/Green	Yellow	Violet	Brown/Green



Ordering information

(to ensure proper function at clock frequencies above 2 MHz, use only original HEIDENHAIN cables)

ESR 125

Part number: 1143902-01

Accessories

PUR connecting cable PUR Ø 6 mm; [(4×0.4 mm²) + (4×0.34 mm²)]; A_p = 0.34 mm²

Cable, M12 connector (female) + M12 connector (male) Part number: 368330-xx

Cable, M12 connector (female) + open cable end Part number: 634265-xx

Dimensions

