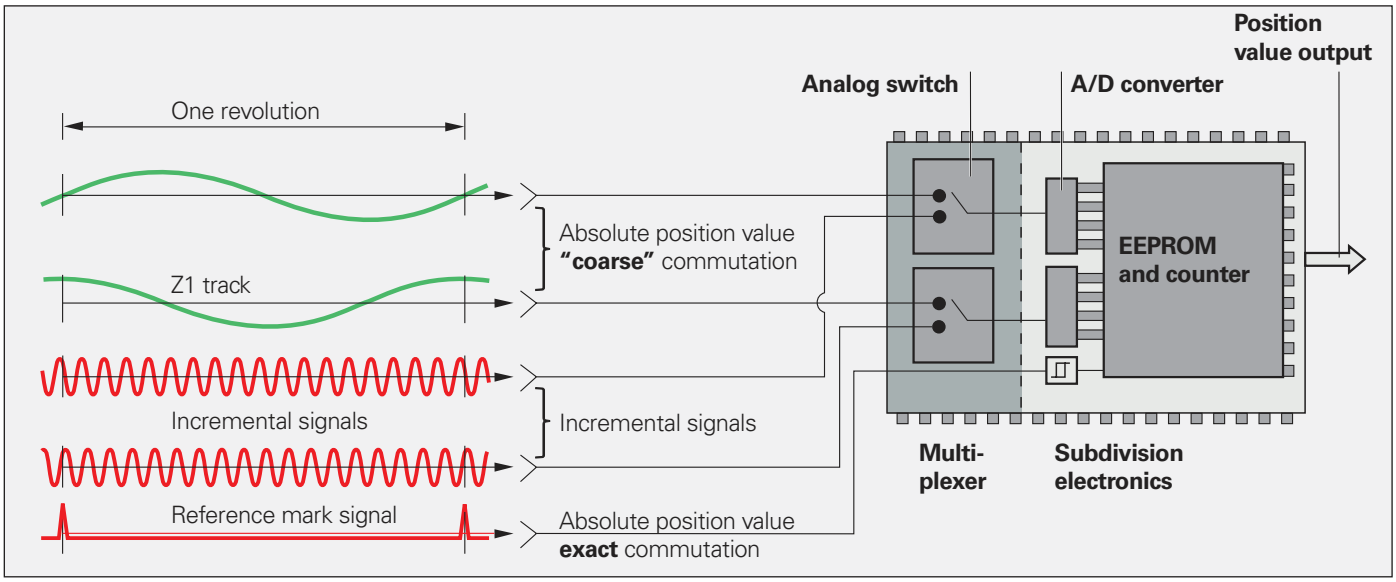
Interfaces
Commutation Signals for Sinusoidal Commutation

The **commutation signals C and D** are taken from the so-called Z1 track and form one sine or cosine period per revolution. They have a signal amplitude of typically 1 V_{PP} at 1 kΩ.
The recommended input circuitry of the subsequent electronics is the same as for the ~ 1 V_{PP} interface. The required terminating resistor of Z_0, however, is 1 kΩ instead of 120 Ω. The **ERN 1185** and **ERN 1387** are rotary encoders with commutation signals for sinusoidal commutation.

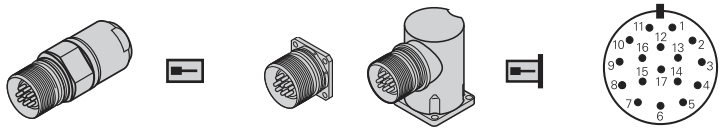
Interface	Sinusoidal voltage signals ~ **1 V_{PP}**
Commutation signals	**2 nearly sinusoidal signals C and D** For signal levels see *Incremental Signals ~ 1 V_{PP}*
Incremental signals	See *Incremental Signals ~ 1 V_{PP}*
Connecting cable Cable length Propagation time	HEIDENHAIN cable with shielding PUR [4(2 x 0.14 mm²) + 4(2 x 0.14 mm²) + (4 x 0.5 mm²)] Max. 150 m 6 ns/m

Electronic commutation with Z1 track

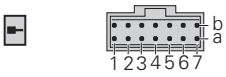


Pin layout

17-pin HEIDENHAIN coupling or flange socket M23



14-pin PCB connector



	Power supply					Incremental signals					
	7	**1**	**10**	**4**	**11**	**15**	**16**	**12**	**13**	**3**	**2**
	1b	**7a**	**5b**	**3a**	**/**	**6b**	**2a**	**3b**	**5a**	**4b**	**4a**
	U_P	**Sensor** U_P [1]	**0 V**	**Sensor** 0 V [1]	**Inside shield**	**A+**	**A–**	**B+**	**B–**	**R+**	**R–**
	Brown/ Green	Blue	White/ Green	White	/	Green/ Black	Yellow/ Black	Blue/ Black	Red/ Black	Red	Black

	Other signals					
	14	**17**	**9**	**8**	**5**	**6**
	7b	**1a**	**2b**	**6a**	**/**	**/**
	C+	**C–**	**D+**	**D–**	**T+** [2]	**T–** [2]
	Gray	Pink	Yellow	Violet	Green	Brown

Cable shield connected to housing;
U_P = power supply; **T** = temperature
Sensor: The sensor line is connected internally with the corresponding power line.
Vacant pins or wires must not be used!

[1] Not assigned if a power of 7 to 10 V is supplied via motor-internal adapter cable
[2] Only for motor-internal adapter cables