

Input circuitry of the subsequent electronics

Dimensioning

Operational amplifier MC 34074
 $Z_0 = 120 \Omega$
 $R_1 = 10 \text{ k}\Omega$ and $C_1 = 100 \text{ pF}$
 $R_2 = 34.8 \text{ k}\Omega$ and $C_2 = 10 \text{ pF}$
 $U_B = \pm 15 \text{ V}$
 U_1 approx. U_0

-3dB cutoff frequency of circuitry

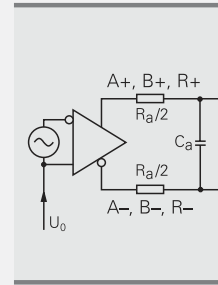
Approx. 450 kHz
 Approx. 50 kHz and $C_1 = 1000 \text{ pF}$
 and $C_2 = 82 \text{ pF}$

The circuit variant for 50 kHz does reduce the bandwidth of the circuit, but in doing so it improves its noise immunity.

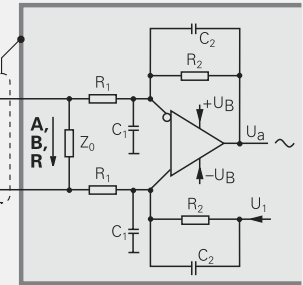
Incremental signals Reference mark signal

$R_a < 100 \Omega$,
 approx. 24Ω
 $C_a < 50 \text{ pF}$
 $\Sigma I_a < 1 \text{ mA}$
 $U_0 = 2.5 \text{ V} \pm 0.5 \text{ V}$
 (relative to 0 V of the power supply)

Encoder



Subsequent electronics



Circuit output signals

$U_a = 3.48 \text{ V}_{PP}$ typical
 Gain 3.48

Signal monitoring

A threshold sensitivity of 250 mV_{PP} is to be provided for monitoring the 1- V_{PP} incremental signals.

Pin layout

12-pin M23 coupling	12-pin PCB connector	15-pin PCB connector	15-pin D-sub connector for IK 115/IK 215										
	Power supply	Incremental signals				Other signals							
	12	2	10	11	5	6	8	1	3	4	9	7	/
	4	12	2	10	1	9	3	11	14	7	5/8/13/15	13	/
	2a	2b	1a	1b	6b	6a	5b	5a	4b	4a	/	3a	/
	13	11	14	12	1	2	3	4	5	6	8/9/10/15	7	/
	U_P	Sensor U_P	0 V	Sensor 0 V	A+	A-	B+	B-	R+	R-	Vacant	Vacant	Vacant
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	/	Violet	Yellow

Output cable inside the motor housing for ERN 1381 Id. Nr. 340 111-xx	17-pin flange socket M23	12-pin PCB connector											
	Power supply	Incremental signals				Other signals							
	7	1	10	4	15	16	12	13	3	2	5	6	8/9/11/ 14/17
	2a	2b	1a	1b	6b	6a	5b	5a	4b	4a	/	/	3a/3b
	U_P	Sensor U_P	0 V	Sensor 0 V	A+	A-	B+	B-	R+	R-	T^+ ¹⁾	T^- ¹⁾	Vacant
	Brown/ Green	Blue	White/ Green	White	Brown	Green	Gray	Pink	Red	Black	Brown ¹⁾	White ¹⁾	Violet

Cable shield connected to housing; U_P = power supply voltage

Sensor: The sensor line is connected internally with the corresponding power line

Vacant pins or wires must not be used!

¹⁾ Only for encoder cable inside the motor housing