

ALE006RE SERIES

ENCODERS

Incremental Encoders for BLDC Motors

As standard, brushless DC motors of the BG range are equipped with Hall sensors for measuring current motor speed. Where more stringent demands are placed on the quality of regulation and positioning accuracy, the motors are available with a digital incremental encoder.

Incremental encoders have no sliding contacts and are not subject to wear. A light-emitting diode, a slotted metal disc, and a photo-diode array form a photoelectric circuit.

An internal logic produces two square-wave signals phased at 90° to each other from the output of the photo-diodes, with or without a reference impulse.

Where the cable length between the motor and encoder is more than 2.5 m, we recommend use of the RE .. TI, fitted with an additional power booster. The standard supply voltage for the incremental encoder is 5 VDC. As specials, 24V versions are also available. An IP54 cover is recommended as protection against external influences. In combination with motor BG 65, the incremental encoder can be incorporated in the IP65 extruded motor body.



<i>Data</i>		RE 30-2	RE 30-3	RE 30-3 TI	RE 56-3	RE 56-3 TI
<i>Operating voltage</i>	VDC	5	5	5	5	5
<i>Impulses per revolution</i>	ppr	100 ... 512	500 ... 512	500 ... 512	1000	1000
<i>Signal rise time</i>	ns	200	180	180	180	180
<i>Signal decay time</i>	ns*	50	40	40	40	40
<i>Current consumption</i>	mA	17 (max. 40)	57 (max. 85)	max. 85	57 (max. 85)	max. 85
<i>Output voltage (low-level)</i>	VDC	max. 0.4 (3.2 mA)	max. 0.4 (3.9 mA)	max. 0.5 (20 mA)	max. 0.4 (3.9 mA)	max. 0.5 (20 mA)
<i>Output voltage (high-level)</i>	VDC	min. 2.4 (40 µA)	min. 2.4 (200 µA)	min. 2.4 (200 µA)	min. 2.4 (200 µA)	min. 2.4 (200 µA)
<i>Max. output current</i>	mA	-	-	70	-	70
<i>Operating temperature</i>	°C	- 40 ... + 100	- 40 ... + 100	- 40 ... + 100	- 40 ... + 100	- 40 ... + 100
<i>Protection class</i>	IP	30	30	30	30	30

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RE 30
(without cover IP 30)

Pin	RE 30-X
1	GND OV
2	(/)
3	A
4	Vcc 5V
5	B

RE 30 T1
(without cover IP 30)

Pin	RE 30X T1	Pin	RE 30X T1
1	n.c.	6	A
2	Vcc 5V	7	/B
3	GND OV	8	B
4	n.c.	9	(/I)
5	/A	10	(/)

RE 30/ RE 30 T1
(with cover IP 54)

Pin	RE 30X (T1)	Pin	RE 30X (T1)
1	Vcc 5V	5	GND OV
2	A	6	(/A)
3	B	7	(/B)
4	(/)	8	(/I)

RE 30/ RE 30 T1
(with cover and brake E 90 IP 54)

Pin	RE 30X (T1)	E 90	Pin	RE 30X (T1)
1	Vcc 5V	n.c.	5	GND OV
2	A	n.c.	6	(/A)
3	B	+	7	(/B)
4	(/)	-	8	(/I)

RE 30/ RE 30 T1
(with BG 65 housing IP 65)

Pin	RE 30X (T1)	Pin	RE 30X (T1)
1	Vcc 5V	4	(/)
2	A	5	GND OV
3	B	6	(/I)

RE 30-3
(Connection example)