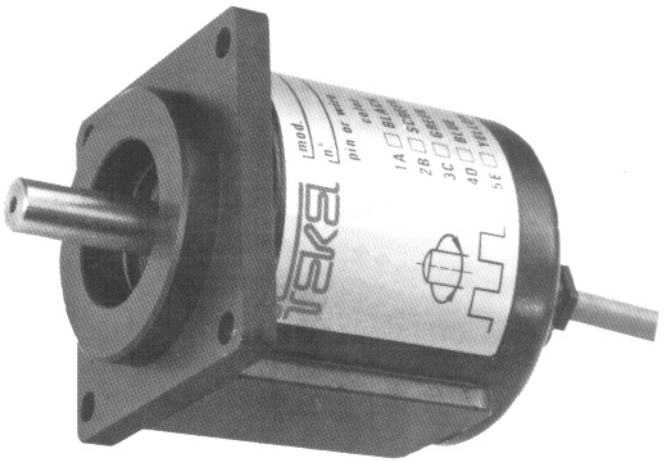
TK40 series



Main features

Specifically designed for industrial applications requiring operations in rugged environments

Extremely rugged mechanical part

Housing sealed against oil, moisture and dust

Standard pulse rate up to 2700 pulses per revolution (without count multiplication logic)

Output capacity over 100 kHz

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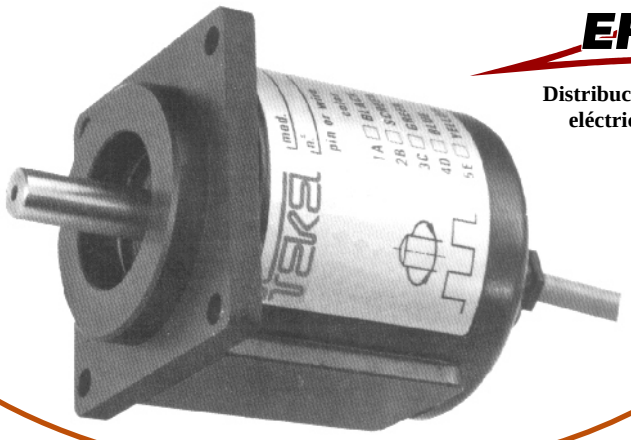
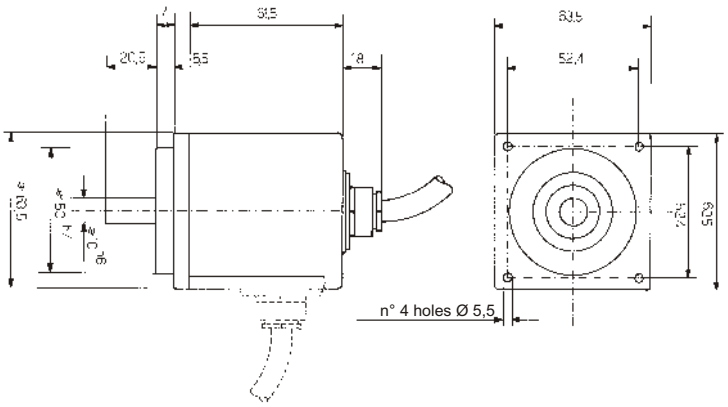
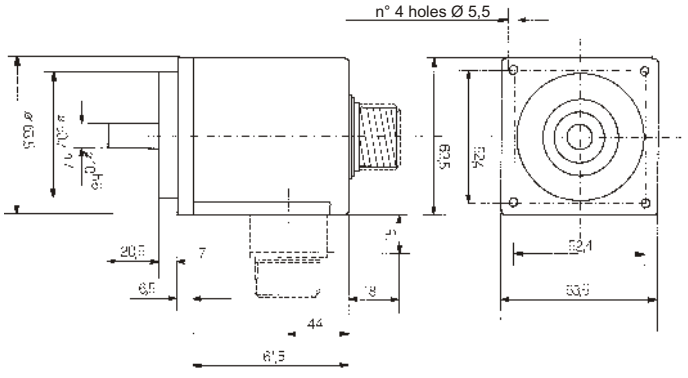




F = Square flange



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TECHNICAL DATA SHEET: TK40 series

TEKEL INSTRUMENTS

TECHNICAL CHARACTERISTICS

Models	TK410 unidirectional TK411 unidirectional+ zero index TK420 bi-directional TK421 bi-directional+ zero index
Standard no. of increments per revolution	2 - 5 - 10 - 20 - 25 - 30 - 32 - 36 - 40 - 50 - 60 - 64 - 72 - 80 - 88 - 90 - 100 - 120 - 125 - 127 - 128 - 150 - 180 - 200 - 240 - 250 - 254 - 256 - 300 - 314 - 360 - 375 - 400 - 500 - 512 - 576 - 600 - 625 - 635 - 720 - 750 - 800 - 900 - 1000 - 1024 - 1200 - 1250 - 1270 - 1440 - 1500 - 1800 - 2000 - 2048 - 2500 - 2540 - 2700

MECHANICAL CHARACTERISTICS

Assembly	**F** Square flange
Dimension	See drawings
Mass	0,45 kg
Slewing speed	10.000 rpm for short period; 6.000 rpm for normal operation; 2.000 rpm with shaft seal
Shaft diameter	10 mm 9,52 mm 8 mm 6 mm
Hollow shaft	Not available
Shaft seal	Available (option)
Starting torque at 25 °C	0,040 Nm without shaft seal; 0,070 Nm with shaft seal
Starting inertia	50 g cm^2
Acceleration	150.000 rad/s^2 (glass disc); 200.000 rad/s^2 (flexible disc - "DP")
Ball bearing working life	10^9 revolution min.
Low torque	Not available
Shaft loading	Axial 200 N; radial 200 N

MATERIALS

Mainframe	Al" anticorodal thermally stabilised
Housing	ABS anti-shock reinforced with fibre glass
Shaft	Stainless steel
Light source	GaAsA linfrared light emitting diode- MTBF 10^5 hours min.
Receivers	Two opto-receivers in push-pull for each channel

ENVIRONMENTAL CHARACTERISTICS

Operating temperature	-10 ÷ +70 °C
Storage temperature	-30 ÷ +80 °C
Humidity	Up to 98 % RH without condensation
Protection	**K4** IP 64 per DIN 40050 - **K5** IP 65 per DIN 40050 - **K6** IP 66 per DIN 40050
Vibrations	10 g (10 ÷ 2000 Hz)
Shock	20 g for 11 ms

ELECTRICAL CHARACTERISTICS

Zero index	Gated on channel A, B, A+B (depending on the model)
Voltage supply (c.c.)	5 V ±5 %, 12 V ±5% 15 V ±5 % (only LINE DRIVER) 11/30 V
Power consumption	150 mA max
Protection	Against polarity reverse (not 5 Vcc)
Frequency range (T = -10 °C ÷ +70 °C)	**S** 0 ÷ 50 kHz **V** 0 ÷ 100 kHz
Output	**S** NPN standard (pull-up resistor included) **OC** NPN open collector **P** PNP output signal (pull-down resistor included) **OP** PNP open collector **PP** push-pull (NPN + PNP) **PP2** push-pull with short circuit protection **PP3** push-pull complementary output **LD** line driver RS422 a 5 V (Motorola 26LS31) only with 5 o 24/5 V power supply **LD** line driver RS422 a 12 V (National MM88C30) only with 12 o 24/12 V power supply **LD** line driver RS422 a 15 V (National MM88C30) only with 15 power supply

CONNECTION CONFIGURATIONS

Output configurations S, OC, P, OP, PP, PP2	**P** on axial cable gland with cable 1 ÷ 6 m; **PL** radial cable gland with cable 1 ÷ 6 m; **S** on 7 pins axial MIL connector; **L** on 7 pins radial MIL connector.
Output configurations LD and PP3	**P** on axial cable gland with cable 1 ÷ 6 m; **PL** radial cable gland with cable 1 ÷ 6 m; **S** on 10 pins axial MIL connector; **L** on 10 pins radial MIL connector.

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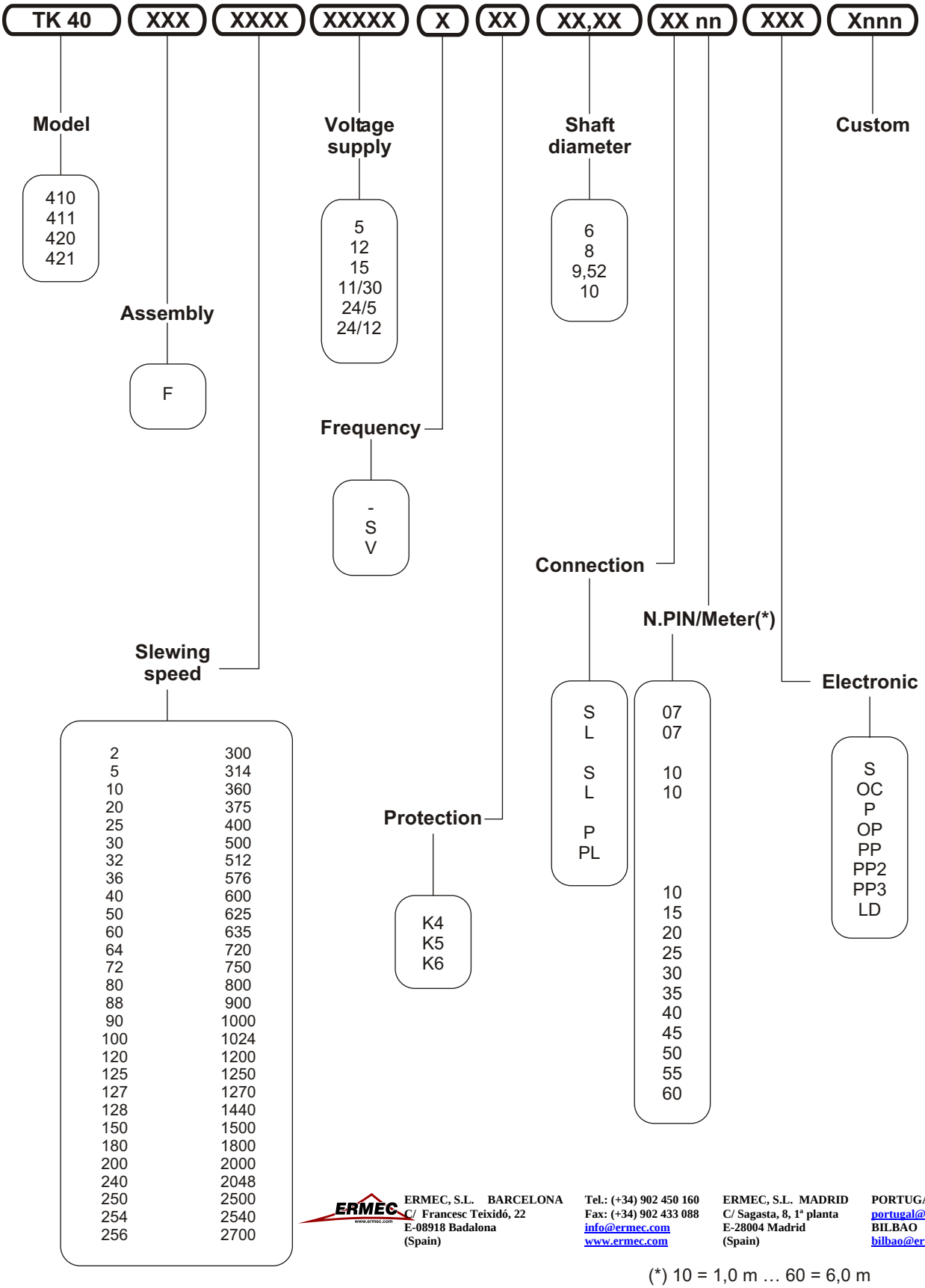

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(*) 10 = 1,0 m … 60 = 6,0 m