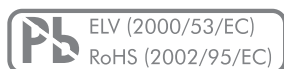


MAIN FEATURES

MAGNETO-OPTICAL SENSING SYSTEM

- Wear-free design provides 10,000,000 revolutions
- Contactless magnetic indexing system enables free running operation (virtually no friction)
- Optical high speed contact sensing
- Resolution 24 or 32 detent
- With or without integrated push button
- Switching torque: From 0.45 to 1.5 Ncm

SWISS CLICK INDEXING SYSTEM™



TYPE E50



For information about the SWISS CLICK INDEXING SYSTEM™ see chapter "Technical explanations"

PRODUCT VARIETY

- Push button force 5 N or without push button
- Revolution 24 or 32 detent
- Switching torque 0.45, 0.6, 1.3 or 1.5 Ncm
- Shaft diameter 6 mm or 1/4"
- Operating voltage 5 VDC regulated or 5 to 26 VDC

POSSIBLE CUSTOMIZATIONS

- Shaft dimensions and shape
- Switching torque
- Software filtered pulse/level change
- Others

TYPICAL APPLICATIONS

- Time shift controls for test & measurement and audio/video mixer desks
- High value medical devices
- Applications with extensive use and/or long life cycles

1 PREFERENCE TYPES SELECTION CHART

¹ For other types/options, see type key.

THREADED BUSHING, IP50

PUSH BUTTON	SWITCHING TORQUE	24 DETENT	32 DETENT
Yes, 5N	0.45 Ncm	E50-1211-000X	-
	0.6 Ncm	-	E50-2213-000X
	1.3 Ncm	-	E50-2214-000X
	1.5 Ncm	E50-1212-000X	-

SPECIFICATIONS

MECHANICAL DATA

Resolution:	24 or 32 detent
Switching torque:	24 detent: 0.45 or 1.5 Ncm (+/- 50%) 32 detent: 0.6 or 1.3 Ncm (+/- 50%)
Rotational life:	10'000'000 revolutions min.
Shaft load (continuous operation):	3 N max. radial, 2 N max. axial
Fastening torque of nut:	0.4 Nm max.

ELECTRICAL DATA

Coding/output:	2-bit quadrature
Resolution:	24 or 32 pulses per revolution (PPR) per channel
Operating speed:	600 RPM max.
Operating voltage:	Regulated version: 5 VDC (+/- 10%) or 5 to 26 VDC (with internal voltage regulator)
Output current load:	20 mA max.
Supply current:	40 mA typ. (at no load condition)

MATERIAL DATA

Shaft:	Plastic
Housing:	Plastic
Nut:	Plastic
Connector leads:	Alloy copper, gold plated (AuCo)

ENVIRONMENTAL DATA

Operating temperature range:	-20 to +70°C
Storage temperature range:	-20 to +80°C
IP sealing:	IP50 shaft/front panel sealing
Flammability:	UL94-HB

PACKAGING QUANTITY

Size:	1 pc
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ADDITIONAL DATA FOR PUSH BUTTON SWITCH

Push button actuation force (new condition):	5 N (+/- 50%)
Push button switch travel:	0.9 mm (+/- 0.2 mm)
Push button switch life:	5,000,000 actuations min.
Actuation strength:	50 N min.

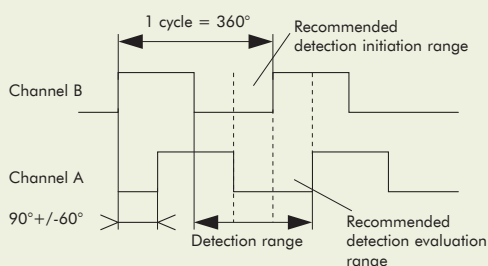
MATERIAL DATA

Contact pads:	Alloy copper, AuCo plated (hard gold)
Membrane switch:	Stainless steel, AuCo plated (hard gold)

SOLDERING CONDITIONS

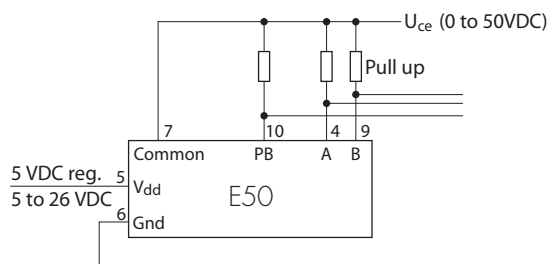
Hand soldering:	300°C max. during 3 sec max.
Wave soldering:	280°C max. peak temperature during 5 sec max.

OUTPUT TIMING



- Signal A is normally in quadrature to signal B (90° phase shift).
- A = B = High is the indexed position and is outside of the detection range because of magnetic indexing.
- The signals should not be evaluated until the state A = B = Low is reached.

SYSTEM INTERFACE



Because driver ULN2003A, equipped with "Open Collector Output" and integrated suppression diodes for inductive loads is used, the cathodes of all diodes = *Common (7)* have to be connected to *UCE*. The pull-up resistors are also connected to *UCE*. This circuitry protects the encoder against e.g. surge currents.

PIN ALLOCATION

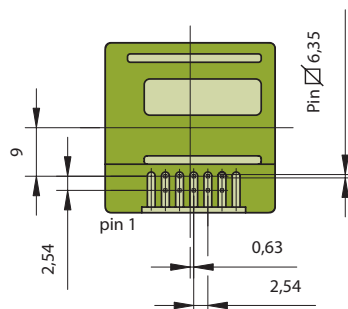
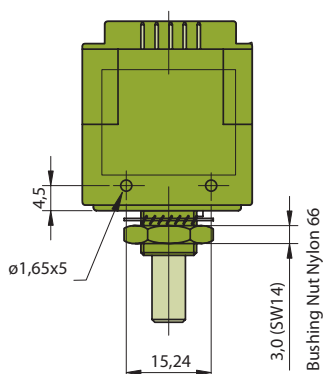
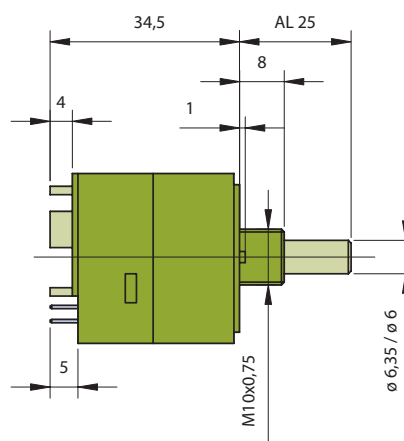
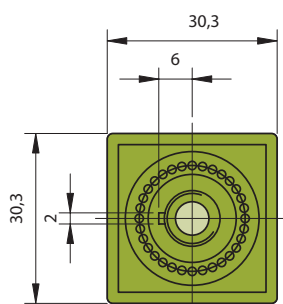
1	No connection	2	No connection
3	No connection	4	Channel A
5	V _{dd}	6	Ground
7	Common (clamp diodes)	8	No connection
9	Channel B	10	Push button

Connector Assignment

1	2
3	4
5	6
7	8
9	10

DRAWINGS

Tolerances unless otherwise specified DIN ISO 2768-1 (m)



INCREMENTAL ENCODER TYPE E50

TYPE KEY

E 50	-	-	-	-	-	-	-	-	-	-
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RESOLUTION

- 1** 24 detent (24 PPR)
- 2** 32 detent (32 PPR)

PUSH BUTTON

- 1** Without push button
- 2** With push button

OPERATING VOLTAGE

- 1** 5 VDC regulated
- 2** 5 to 26 VCD

TORQUE

- 1** 0.45 Ncm (24 detent)
- 2** 1.5 Ncm (24 detent)
- 3** 0.6 Ncm (32 detent)
- 4** 1.3 Ncm (32 detent)

SHAFT DIAMETER

- X** 6 mm
- Z** 1/4"

SHAFT LENGTH (AL)

- 000** 25 mm
- xxx** ¹ Custom
(e.g. 20.0 mm = 200)

¹ Customized shaft length
Please state shaft length (AL) measured from mounting face (max. AL = 25 mm).

